Curriculum Vitas de la Facultad del Programa

Especialidad en Ciencias e Ingeniería de Computadoras	Especialidad en Computación Científica
Javier A. Arroyo	Robert Acar
Dorothy Bollman	Oscar Moreno
José A. Borges	Pablo Negrón-Marrero
Gabriele Castellini	Michael E. O'Sullivan
Isidoro Couvertier	Arturo Portnoy
José L. Cruz-Rivera	Avijit Purkayastha
Wieslaw Kazimierz, Dziobiak	Avijit Purkayastha
Javier Echauz	Wolfgang André Rolke
Shawn D. Hunt	Jaime Seguel
Luis O. Jimenez	Lev G. Steinberg
Octavian Nicolio	Pablo Tarazaga
Thomas L. Noack	Miguel Vélez
Jorge L. Ortiz	
Hamed Parsiani	
Manuel A. Pérez	
Pedro I. Rivera	
Domingo Rodríguez	
Néstor J. Rodríguez	
Ramón E. Vásquez	

Especialidad en Ciencias e Ingeniería de Computadoras

VITAE - Javier A. Arroyo-Figueroa

Mailing address:

Suite 264 P.O. Box 7999
Mayaguez, P.R. 00681-7999

Present position:

Assistant Professor (Full-time)
Department of Electrical and Computer Engineering
University of Puerto Rico - Mayaguez Campus
Mayaguez, PR 00681-5000

Education:

Ph.D. in Computer Engineering (1997) University of Florida, Gainesville, Florida

M.E. in Electrical Engineering (1992) University of Florida, Gainesville, Florida

B.S. in Computer Engineering (1990) University of Puerto Rico, Mayaguez, Puerto Rico

Certificate in Digital Electronics (1985) Vocational High School, Mayaguez, Puerto Rico

Experience:

1991-1997
Research Assistant (part-time)
Database Systems Research and Development Center
University of Florida - Gainesville, Florida

Consulting:

1996-97
International Business Machines Corp.
NIIIP Project Office, Poughkeepsie, New York

1994-97
AbleSoft Corporation, Gainesville, Florida

1992-97
Party City of Puerto Rico, San Juan, Puerto Rico

1985-97
Mueblerias Rivera, Arecibo, Puerto Rico

1992-97
Tiendas Don Juan y El Sportman, Mayaguez, Puerto Rico

1988
Touche-Ross & Co., Hato Rey, Puerto Rico

Publications:

Arroyo-Figueroa, J.A., “An Extensible Knowledge-Base Programming Language and Its Extensible Object Model”, Ph.D. Dissertation, Department of Computer and Information Science and Engineering, University of Florida, Gainesville, 1997.

Shyy, Y.M., Arroyo-Figueroa, J., Su, S.Y.W. and Lam, H., "The design and implementation of K: a high-level knowledge-base programming language of OSAM*.KMS", VLDB Journal, 1996 (5), pp. 181-195

Su, S., Lam, H., Yu, T.F., Arroyo-Figueroa, J., Yang, Z. and Lee, S., "NCL: A Common Language for Achieving Rule-Based Interoperability among Heterogeneous Systems", Journal of Intelligent Information Systems, 1996 (6), pp. 171-198

Su, S., Lam, H., Yu, T.F. and Arroyo-Figueroa, J., "An Extensible Knowledge Base Management System for Supporting Rule-Based Interoperability among Heterogeneous Systems", (invited paper) Conference of Information Knowledge Management (CIKM), Baltimore, pp. 1-10, 1995

Su, S.Y.W., Lam, H., Arroyo-Figueroa, J., Zhuang, R., and Prasad, N., "OSAM*.KBMS: An Object-Oriented Knowledge Base Management System for Supporting Advanced Applications", Proc. of the 1993 ACM SIGMOD Int'l Conference on Management of Data, pp. 540-541, 1993

Memberships: Institute of Electrical and Electronics Engineers, Computer Society

Honors:

Magna Cum Laude, B.S.Cp.E. University of Puerto Rico (1990)
Dean's List, University of Puerto Rico at Mayaguez (1987-1990)
Ronald Reagan Academic Fitness Presidential Award (1985)

Vitate - Dorothy Bollman

ADDRESS:

Chairperson
Department of Mathematics
University of Puerto Rico, Mayagüez
Mayagüez, PR-00681-5000

EDUCATION:

Ph.D., University of Illinois at Urbana, 1964

PROFESSIONAL EXPERIENCE:

Associate Professor and Professor, Department of Mathematics,University of Puerto Rico, 1965-present; Chair, 1996-present.

Faculty Loan Program, IBM, Kingston, N.Y., summer 1988.

Visiting Scholar, Department of Computer Science, Indiana University, 1986-87.

Professor, Department of Mathematics and Computer Science, University of Puerto Rico at Rio Piedras, 1981-83.

Associate Editor of Mathematical Reviews (in charge of Computer Science) and lecturer of Mathematics, University of Michigan at Ann Arbor, 1977-79.

Researcher, IBM Watson Center, Yorktown Heights, N.Y., summer 1974.

Researcher, Department of Computer Science, Cornell University,1972-73.

Assistant Professor, Department of Mathematics, Iowa State University, 1967-68.

Assistant Professor, Department of Mathematics, Michigan State University, 1964-65.

PUBLICATIONS IN THE LAST FIVE YEARS:

Digit-index permutations, Congressus numer. 91 (1992), 213-217. Implementing FFTs in Sisal, Proc. of the Second Sisal Users' Conference (1992), 56-62. (with J. Seguel and F. Sanmiguel)

Even and quarter-even prime length symmetric FFTs and their Sisal implementations, Proc. Sisal '93, 18-24. (with J. Seguel)

Fast digit-reversal algorithms on a shared-memory machine, Parallel Computing 20 (1994), 93-99. (with J. Seguel)

Digit-index permutations: an applicative approach, Proc. High Performance Functional Computing," (1995), 97-104 (with J. Seguel and J. Feo).

Fast digit-index permutations, Scientific Programming, Vol.5 no.2(1996), 137-146 (with J. Seguel and J. Feo).

A framework for FFT permutations, to appear in IEEE Transactions on Parallel and Distributed Computing (with J. Seguel and J. Feo.)

High-performance functional FFTs, in progress. On the parallel generations of Costas arrays, in progress.

PRESENTATIONS AT NATIONAL/INTERNATIONAL MEETINGS DURING THE LAST 5 YRS:

``Digit-index permutations," Southeastern International Conference on Graph Theory, Combinatorics, and Computing, February, 1992.

``Implementing FFTs in Sisal," Second Sisal Users' Conference, San Diego, CA, October, 1992.

``Functionalizing FFT permutations," Southeastern International Conference on Graph Theory, Combinatorics, and Computing, February, 1993.

``Even and quarter-even prime length symmetric FFTs and their Sisal implementations," Third Sisal Users Conference, San Diego, CA, October, 1993.

``Digit-index permutations: an applicative approach," High Performance Functional Computing, Denver, CO., April, 1995.

PROFESIONAL WORK:

Reviewer for Computing Reviews and Mathematical Reviews

Member of the Editorial Board, Parallel and Distributed Computing Practices

GRANTS:

NSF, Puerto Rico EPSCoR II, ``Computational Mathematics Group," 1992-94, Co-Principal Investigator.

NSF-CISE, ``Infrastructure for Computer Science Research in Puerto Rico, I," 1992-94, Co-Principal Investigator.

NSF-RIMI, ``Student Research and the Computational Mathematics Group,"1994-97, Co-principal Investigator.

NSF-CISE, ``Infrastructure for Computer Science Research in Puerto Rico, II," 1994-99, Co-Principal Investigator.

Vitae - José A. Borges

Date of Birth: November 9, 1955

Academic Rank: Associate Professor (Full-Time)

EDUCATION:

Ph.D., December 1989, Computer Science, University of Illinois, Urbana, IL.
M.S., 1982, Computer Engineering, Syracuse University, Syracuse, N.Y.
M.S., 1979, Electrical Engineering, Georgia Institute of Technology, Atlanta, GA
B.S.,1978, Electrical Engineering, University of Puerto Rico, Mayaguez, PR

UPRM SERVICE: 16 Years

1982 - Assistant Professor
1985-1989 - Study Leave
1991 - Associate Professor
1996 - Professor

EXPERIENCE:

Senior Associate Engineer, IBM, Poughkeepsie, N.Y., June 1979 to July 1982

Teaching Assistant, Department of Electrical Engineering, Georgia Institute of Technology, Atlanta, GA, January 1978 to March 1979

MEMBERSHIPS: ACM

PUBLICATIONS:

J. Borges and R. Johnson (1990) Multiparadigm Visual Programming Language. IEEE Workshop on Visual Languages. 233-240.

W. Martínez, J. Borges, N. J. Rodríguez, S. Hunt, "A Natural Language Processor with Neural Networks", IEEE International Conference on System, Man and Cybernetics, October 1995.

J. A. Borges, I. Morales and N. J. Rodríguez, "Guidelines for Designing Usable World Wide Web Pages", Conference Companion, Computer-Human Interaction Conference (CHI 96), Vancouver, Canada, April, 1996.

González, M., J. Borges, J. Navarro and N. Rodríquez, "ARSS: An Automatic Resource Scheduling System," Proceedings of the 21st. International Conference on Computers & Industrial Engineering, San Juan, Puerto Rico, March, 1997.

Manuel A. Perez, José A. Borges, and Néstor J. Rodríguez, "HCI Research & Education at UPR Mayagüez", Conference Companion, Proceedings CHI'97, Atlanta, March, 1997.

José A. Borges, Merbil González, José Navarro, Néstor J. Rodríguez, “SAAS: Automatic System for Auto-Supervision in an Emergency Room”, Proceedings of the 10th IEEE Symposium on Computer-Based Medical Systems (CBMS'97), Maribor, Slovenia, June, 1997.

José A. Borges, Israel Morales, Néstor J. Rodríguez, "Page Design Guidelines Developed through Usability Testing", in C. Forsythe, E. Grose & C. J. Ratner, (eds.) Human Factors in Web Development, Lawrence Earlbaum, 1997.

Néstor J. Rodríguez, José A. Borges, Domingo Rodríguez, Emily Angarita, Rafael Muñoz, “A Computer-Based Patient Record for Improving Nursing Care”, Journal of Informatica Medica, June, 1997.

Rodríguez, N. J., Borges J. A. & Morales, I., "Page Design Guidelines for Improving WWW Navigation," 7th. International Conference on Human-Computer Interaction, San Fransico, August, 1997.

GRANTS:

“Development of a Computer Engineering Research Environment at the University of Puerto Rico at Mayagüez”, NSF, $1,506,891, October 1994-September 1999, CoPI.

PROFESSIONAL DEVELOPMENT ACTIVITIES:

Three weeks Course on Object-Oriented Analysis and Recursive Design at IBM Raleigh, NC (1991)

SISAL Workshop at UPR, Rio Piedras (1992)

Tutorial on: "Usability Inspection Methods", Conference on Human Factors in Computing Systems, Boston, Massachusetts, April 1994.

Tutorial on: "Intelligent Multimedia Interfaces", Conference on Human Factors in Computing Systems, Boston, Massachusetts, April 1994.

"Medical Informatics Seminar", Harvard School of Medicine, Boston, Massachusetts, octubre de 1997.

Vitae - Gabriele Castellini

Personal Information:

Born: September 10, 1956 in Atessa, Italy, citizen of Italy, US Permanent Resident

Address:

Home:
Condominio Las Mesas, Apt. 701, Carr. 349, Km. 5.2,
Mayagüez, PR 00680
Ph. (787)265-1003}

Office:
Department of Mathematics, University of Puerto Rico, Mayagüez CampusP.O. Box 5000, Mayagüez, PR 00681-5000 Ph. (787)832-4040 ext. 3242}E-mail:
g_castel@ rummat1.upr.clu.educastell@ jacobi.upr.clu.edu
G_Castellini@ rumac.upr.clu.edu

Position: Professor, tenured

Education:

1982-86	Ph.D., Mathematics, August 1986 Kansas State University, Manhattan, KS
	M.S., Mathematics, May 1984
	advisor: G. E. Strecker title of dissertation: Closure operators, epimorphisms and Hausdorff objects
1975-79	Universitá di L'Aquila, L'Aquila, ItalyLaurea in Matematica, December 1979
	advisor: Eraldo Giuli title of thesis: epireflections in abelian topological groups

Research Interest:

Categorical topology, category theory, categorical algebra, applications of category theory to computer science

Experience:

1994-present	University of Puerto Rico, Mayagüez campus, Professor of Mathematics
Spring 1993	Universitá di L'Aquila, L'Aquila, Italy, Visiting Professor
Fall 1992	Kansas State University, Manhattan, Kansas, Visiting Professor
1989-1992	University of Puerto Rico, Mayagüez Campus, Associate Professor of Mathematics
1986-89	University of Puerto Rico, Mayagüez Campus, Assistant Professor of Mathematics
1982-86	Kansas State University, Graduate teaching Assistant
1980-82	Military Geographic Institute, Italy, Second Lieutenant
1979-80	Universitá di L'Aquila, Instructor

Courses taught:

General Mathematics for Biological Sciences, College Algebra, Trigonometry, Calculus 1, 2, 3, General Calculus, Linear Algebra, Differential Equations, Advanced Calculus 1, 2, Numerical Analysis, Abstract Algebra, Topology, Higher Algebra 1,2, Topics in Algebra , Computer Languages - Scheme (Lisp)

Committees:

Undergraduate advisors committee, January 87-August 88

Graduate committee, August 88-May 92

Committee for the improvement of research, August 91-June 92

President of the committee for release time for research, September 93-January 97

Committee on the improvement of faculty evaluation, February 96-June 96

President of the organizing committee for SIDIM97

Faculty committee on release time for research, Spring 97

Graduate Students:

Carlos Lezama. Thesis title: Caracterización de epimorfismos via operadores de clausura en subcategorías de grupos y de grupos topológicos

Conferences:

“Topology meeting," Trieste, Italy, September 1978

“Gnsaga meeting," Perugia, Italy, March 1980

“Conference on the mathematical foundation of programming semantics," Kansas State University, Manhattan, KS, April 1985

“AMS-MAA joint meetings," New Orleans, LA, January 1986

“International conference in category theory," Catholic University

of Louvain, Louvain-La-Neuve, Belgium, July 1987

“CAT-TOP Prague 88," Mathematics Institute of Charles University, Prague, Czechoslovakia, August 1988

“IV SIDIM (Seminario Interuniversitario de Investigación Matematica),"

Humacao, Puerto Rico, February 1989

“V SIDIM (Seminario Interuniversitario de Investigación Matematica)," Arecibo, Puerto Rico, February 1990

“855th AMS meeting," Kansas State University, Manhattan, KS, March 1990

“A workshop in categorical topology," University of Toledo, Toledo, Ohio, September 1991

“VII SIDIM (Seminario Interuniversitario de Investigación Matematica),"Mayagüez, Puerto Rico, February 1992

“IX SIDIM (Seminario Interuniversitario de Investigación Matematica),"

Humacao, Puerto Rico, February 1994

"A workshop in categorical topology," University of L'Aquila, L'Aquila, Italy, September 1994

"XI SIDIM (Seminario Interuniversitario de Investigación Matematica)," Arecibo, Puerto Rico, April 1996

"XII SIDIM (Seminario Interuniversitario de Investigación Matematica),"Mayagüez, Puerto Rico, February 1997

Talks:

Epireflections in abelian topological groups, Universitá di L'Aquila, December 1979

Some results in abelian group theory, Universitá di L'Aquila, February 1980

Epireflections versus bireflections for topological functors, Kansas State University, February 1983

Category theory and Pontryagin duality,Kansas State University, March 1984

Closure operators and epimorphisms in abelian groups and in general, Kansas State University, April 1985

Closure operators, epimorphisms and Hausdorff objects, Kansas State University, May 1986

Closure operators, monomorphisms and epimorphisms, University of Puerto Rico at Mayagüez, February 1987

Compact objects of a closure operator, Universitá di L'Aquila, June 1987

A factorization of the Pumpl\"un-R\"ohrl connection, Catholic University of Louvain, July 1987

Closure operators and compactness, Charles University, Prague, August 1988

Closure operators and compactness, University of Puerto Rico at Mayagüez, October 1988

Regular closure operators and compactness, Kansas State University, March 1990

Closure operators and connectedness, University of Toledo, September 1991

Hereditary closure operators and injectivity,University of Puerto Rico at Mayagüez, February 1992

An approach to a dual or regular closure operators, Universitá di L'Aquila, February 1993

Two approaches to the closure, from ``above'' and from ``below'', University of Puerto Rico at Humacao, February 1994

Connectedness and disconnectedness, a more general approach, Universitá di L'Aquila, September 1994

Closure operators with respect to a functor, Interamerican University at Arecibo, April 1996

Papers:

1. *Epireflections in the category of abelian topological groups*, Rendiconti di Matematica (4) 1981, Vol. 1, serie VII, 609-617.
2. *On systems of cogenerators for epireflective subcategories*, with A. Tozzi, Riv. Mat. niv. Parma (4) 9 (1983) 373-377
3. *Epireflections versus bireflections for topological functors*, Quaest. Math., 8 (1) 1985, 47-61
4. *Closure operators, monomorpisms and epimorphisms in categories of groups*, Cahiers Topologie Geom. Differentielle Categoriques, Vol. XXVII-2 (1986) 151-167
5. *Closure operators and functorial topologies*, J. Pure Appl. Algebra 55 (1988) 251-259
6. *Compact objects, surjectivity of epimorphisms and compactifications*, Cahiers Topologie Geom. Differentielle Categoriques, Vol. XXXI-1 (1990) 53-65
7. *Global closure operators versus subcategories*, with G. E. Strecker, Quaest. Math. 13 (1990) 417-424

8. *A factorization of the Pumpl\"un-R\"ohrl connection*, with J. Koslowski and G. E. Strecker, Topology and its Appl. 44 (1992) 69-76
9. *Regular closure operators and compactness* ,Cahiers Topologie Geom. Differentielle Categoriques Vol. XXXIII-1 (1992) 21-31
10. *Hereditarity of closure operators and injectivity*, with E. Giuli, Comment. Math. Univ. Carol. 33, 1 (1992) 149-157
11. *Hereditary and modal closure operators*, with J. Koslowski and G. E. Strecker, Category Theory 1991, Proceedings of the Summer International Meeting in Montreal (Montreal, Canada, June 1991), C.M.S. Conference Proceedings, AMS (1992) 111-132
12. *Categorical closure operators via Galois connections*, with J. Koslowski and G. E. Strecker, Recent Developments of General Topology and its Applications, International Conference in Memory of Felix Hausdorff (1868-1942), Mathematical Research 67, Akademie Verlag, Berlin (1992) 72-79
13. *Epimorphisms in categories of separated fuzzy topological spaces*, with I. Alderton, Fuzzy Sets and Systems 56 (1993) 323-330
14. *Closure operators and polarities*, with J. Koslowski and G. E. Strecker, Proceedings of the 1991 Summer Conference on General Topology and its Applications (Madison, Wisconsin, June 1991) Annals of the New York Academy of Sciences, Vol. 704 (1993) 38-52
15. *Closure operators and connectedness*, with D. Hajek, Topology and its Appl. 55 (1994) 29-45
16. *Regular closure operators*, with J. Koslowski and G. E. Strecker, Journal of Applied Categorical Structures 2 (1994) 219-244
17. *An approach to a dual of regular closure operators*, with J. Koslowski and G. E. Strecker, Cahiers Topologie Geom. Differentielle Categoriques Vol. XXXV-2 (1994) 109-128
18. *Connectedness, disconnectedness and closure operators, a more general approach*, Proceedings of the Workshop on Categorical Topology (L'Aquila 1994), Kluwer Academic Publishers (1996) 129-138
19. *Connectedness, disconnectedness and closure operators: further results*, Quaestiones Mathematicae (to appear)
20. *Connectedness and disconnectedness: a different perspective*, Quaestiones Mathematicae (to appear)
21. *Closure operators with respect to a functor*, with E. Giuli (submitted)
22. *Connectedness with respect to a closure operator*, (submitted)}
23. *U-Closure operators and compactness*, with E. Giuli (in preparation)}
24. *Closure operators and fuzzy connectedness*, with I. W. Alderton (in preparation)}

Reviews:

Papers

Separation properties in algebraic categories of topological spaces by Günther Richter, Topology and its appl. 20 (1985) 79-87, MR 86k:54019

Referee's work

Journal of Applied Categorical Structures, Portugaliae Mathematica, Information Sciences, Mathematical Reviews, Foundation for Research and Development of South Africa

Book Reviews

Abstract and concrete categories, by J. Adámek, H. Herrlich and G.E. Strecker, Wiley, New York, 1990,American Mathematical monthly, February 1990

Proposals:

Closure operators in Topology and Algebra, submitted to NSF, \$159,872, denied

Closure operators and Applications, submitted to NSF, \$81,546, pending

Professional Associations:

American Mathematical Society, Unione Matematica Italiana

References:

Professor G. E. Strecker
Dept. of Math., Cardwell Hall
Kansas State University
Manhattan, KS 66506
U.S.A.

Professor E. GiuliDipartimento di Matematica Pura e ApplicataUniversitá di L'Aquila67100 L'AquilaItalyProfessor J. KoslowskiDept. of Math. and Comp. Sc.
Macalester College
Saint Paul, MN 55105-1899
U.S.A.

Vitae: Isidoro Couvertier

EDUCATION: Ph. D. - Louisiana State University, 1996

RANK: Assistant Professor

TYPE OF CONTRACT: Tenure

EXPERIENCE:

1. University of Puerto Rico, 1985-Present
   A. Computer Science Department Head - UPR- Arecibo
   B. Computer Center Director – UPR Arecibo
   C. Computing Resource Coordinator – UPR Arecibo
   D. Assistant Professor - General Engineering Department, UPR-Mayaguez, 1996 to present.

2. Consultant 1997- Present

3. Hewlett Packard 1983-85 (Product/Design Engineer)

4. McDonell Douglas 1981 (Assoc. Engineer/Scientist)

OTHER RELEVANT TASKS:

1. **Areas of Interest**: Parallelizing compilers, operting systems, programming languages, networking, human-computer interfaces and interprocedural analysis.
2. Co-Founder and coordinator of the Academic Excellence Program at UPR Mayaguez - College of Engineering.

Especialidad en Sistemas Digitales y Procesamiento de la Información

RESUME: José L. Cruz-Rivera

Date of Birth: June 13, 1970
Academic Rank: Assistant Professor

EDUCATION:

B.S., Electrical Engineering, University of Puerto Rico, Mayagüez, PR, 1991.
M.S., Electrical Engineering, Georgia Institute of Technology, Atlanta, GA, 1992.
Ph.D., Electrical Engineering, Georgia Institute of Technology, Atlanta, GA, 1996.

UPRM SERVICE:

1996-PRESENT	Assistant Professor
1991-1995	Instructor (on study leave)

EXPERIENCE:

6-96	PRESENT	Assistant Professor	University of Puerto Rico, Mayagüez
3-92	6-96	Research Assistant	Georgia Institute of Technology
9-91	3-92	Teaching Assistant	Georgia Institute of Technology
5-91	9-91	Design Engineer	International Business Machines (IBM-Poughkeepsie, NY)
5-90	8-90	Design Engineer	International Business Machines (IBM-Fishkill, NY)
5-89	8-89	T&E Engineer	AMPER (Madrid, Spain)
5-90	5-91	Research Assistant	University of Puerto Rico, Mayagüez
5-89	5-90	Teaching Assistant	University of Puerto Rico, Mayagüez

CONSULTING: None

REGISTRATION: EIT-Georgia

PUBLICATIONS:

J. L. Cruz-Rivera, T. K. Gaylord, E. N. Glytsis, and D. S. Wills, "Applications–driven optical interconnect technology development," in 1994 Annual Meeting Optical Society of America Program, Symposium on Optical Interconnects: 2, paper MYY3, (Dallas, Texas), Sept. 1994.

D. S. Wills, W. S. Lacy, and **J. L. Cruz-Rivera**, "The Offset Cube: an optoelectronic interconnection network," in Parallel Computer Routing and Communication (K. Bolding and L. Snyder, eds.), pp. 86–100, Springer-Verlag, 1994.

J. L. Cruz-Rivera, D. S. Wills, T. K. Gaylord, and E. N. Glytsis, "Architectural design issues for optoelectronic k-ary n-cube interconnection networks," in 1995 Annual Meeting Optical Society of America Program, Optical Computing Session, paper FO4, (Portland, Oregon), Oct. 1995.

J. L. Cruz-Rivera, D. S. Wills, T. K. Gaylord, and E. N. Glytsis, "Modeling the technology impact on the design of a two-level interconnection network," in 1996 International Conference on Computer Design (Austin, Texas), pp. 165-169, Oct. 7–9, 1996.

J. L. Cruz-Rivera, W. S. Lacy, D. S. Wills, T. K. Gaylord, and E. N. Glytsis, "Performance modeling of optical interconnection technologies for massively parallel processing systems," in Third International Conference on Massively Parallel Processing Systems using Optical Interconnections (Maui, Hawaii), pp. 264-275, Oct. 27–29, 1996.

J. L. Cruz-Rivera, W. S. Lacy, D. S. Wills, "Trace-driven evaluation of the Offset Cube—an optoelectronic network topology for ultracompact multicomputers," in 1996 Annual Meeting of the Optical Society of America Program (Rochester, New York), Symposium on Silicon Computing: The Impact of Optical Interconnects, paper MLL3, Oct. 20–25, 1996.

J. L. Cruz-Rivera, E. V. R. Di Bella, D. S. Wills, T. K. Gaylord, and E. N. Glytsis, "Parallelized formulation of the Maximum Likelihood-Expectation Maximization algorithm for fine-grain message-passing architectures, IEEE Transactions on Medical Imaging, vol. 14, pp. 758–762, Dec. 1995.

D. S. Wills, H. H. Cat, **J. L. Cruz-Rivera**, W. S. Lacy, J. M. Baker, J. Eble, A. López-Lagunas, and M. Hopper, "High-throughput, low-memory applications on the Pica architecture," accepted for publication in IEEE Transactions on Parallel and Distributed Systems, 1996. Currently in press.

D. S. Wills, J. M. Baker Jr., H. H. Cat, S. Chai, **J. L. Cruz-Rivera**, J. Eble, A. Gentile, M. Hopper, W. S. Lacy, A. López-Lagunas, Phil May, and Tarek Taha, "Processing architectures for smart pixel systems", accepted for publication in IEEE Transactions on Quantum Mechanical Devices, 1996. (Invited paper). Currently in press.

W. S. Lacy, **J. L. Cruz-Rivera**, and D. S. Wills, "The Offset Cube: a three-dimensional multicomputer network topology using through-wafer optics," submitted to IEEE Transactions on Parallel and Distributed Systems, Jan. 1996. Currently in review.

J. L. Cruz-Rivera, M. A. Pérez-Quiñones, "Experiences in conducting web-based, paperless undergraduate software and hardware design courses," accepted for presentation at the 1997 Frontiers in Education Conference (Pittsburgh, Pennsylvania), Nov. 5-8, 1997.

J. L. Cruz-Rivera, "Incorporating multicomputer hardware-software design concepts into the undergraduate curriculum through physical implementation," accepted for presentation at the 1997 Frontiers in Education Conference (Pittsburgh, Pennsylvania), Nov. 5-8, 1997.

MEMBERSHIPS:

Optical Society of America (OSA)
Institute of Electrical and Electronics Engineers (IEEE)
IEEE Computer Society
IEEE Lasers and Electro-Optics Society
Sigma XI Research Society

HONORS:

Patricia Roberts-Harris Doctoral Fellowship (1991-1996)

COURSES TAUGHT:

FALL 1996 **INEL 4217-** Microprocessor Interfacing
INEL 4075- Fundamentals of Electrical Engineering

OTHER DUTIES:

Principal Investigator: NSF Research Initiation Award # ECS-9633673
"Performance modeling of optical communication networks for ultracompact massively parallel processing systems"

Co-Principal Investigator: ID Research Labs
"Fingerprint Verification System: A Vectorial Approach"

Departmental Representative: Engineering Faculty Committee on Student Affairs

Coordinator: Electronics Departmental Committee

Administrator: Microprocessor Development Laboratory (UPRM)

PROFESSIONAL ACTIVITIES: None

RESEARCH PROJECTS:

Sponsor: ***National Science Foundation CAREER Program***
Principal Investigator: Dr. José L. Cruz Rivera
Title: Optoelectronic Multicomputer Networks Modeling and K-12 Teacher Training and Enhancement: A Career Development Plan
Effective Dates: July 1, 1997 to June 30, 2000
Award: $209,504 (+ $149,904 UPR Matching Funds)
Comments: Recommended for approval. Pending official notification.

Sponsor: ***National Science Foundation Research Initiation Planning Grant***
Principal Investigator: Dr. José L. Cruz Rivera
Title: Performance Modeling of Optical Communication Networks for Ultracompact Massively Parallel Processing Systems
Effective Dates: July 15 1996 to June 30 1996
Award: $18,000 (+ $8,000 UPR Matching Funds)
Comments: Grant Number: ECS-9633673

Sponsor: ***Biometrics Imagineering***
Principal Investigators: Dr. José L. Cruz Rivera, Dr. Luis Jiménez, and Dr. Ramón Vásquez
Title: Fingerprint Verification System: A Vectorial Approach
Effective Dates: Jan 2, 1997 to June 30, 1998
Award: $228,989.87

Sponsor: ***Industrial Affiliates Program***
Principal Investigator: Dr. José L. Cruz Rivera
Title: FPGA-Based Design and Implementation of Network Router Interfaces for Multiprocessing Systems
Effective Dates: Oct 31, 1996 to May 15, 1997
Award: $2,600

Sponsor: ***Industrial Affiliates Program (with Biometrics Imagineering, Inc.)***
Principal Investigators: Dr, José L. Cruz Rivera, Dr. Luis Jiménez, and Dr. Ramón Vásquez
Title: Fingerprint Verification System: A Vectorial Approach
Effective Dates: Jan 1, 1997 to May 15, 1997
Award: $2,700

Vitae- Wieslaw Kazimierz, Dziobiak

Personal Information:

Date of birth: March 4, 1950Place of birth: Lodz (Poland)Nationality: PolishCitizenship: Polish, US residentStatus: married (since 1973)

Private address: Darlington, Apt 308, Mayagüez, PR 00680, USA
e-mail: w_dziobiak@rumac.upr.clu.edu

Degrees:

1974 MS in Mathematics, in the area of Numerical Methods
N. Copernicus University, Torun, Poland

1982 PhD in Mathematics, in the area of Algebra and Logic
Wroclaw University, Poland

Employment and academic positions held:

1974 - 1980 Assistant Professor, Institute of Mathematics, N. Copernicus University, Torun, Poland

1980 - 1982 Assistant Professor, Section of Logic, Polish Academy of Sciences, Lodz, Poland

1982 - 1987 Adjunct Professor, Section of Logic, Polish Academy of Sciences, Lodz, Poland

1987 - 1991 Adjunct Professor, Institute of Mathematics, N. Copernicus University, Torun, Poland

1991 – 1992 Visiting Assistant Professor, Department of Mathematics, State University of New York, The College at New Paltz, New Paltz, NY 12561

1992 - 1993 Adjunct Professor, Institute of Mathematics, N. Copernicus University, Torun, Poland

1993 - 1996 Assistant Professor, Department of Mathematics, University of Puerto Rico, Mayagüez Campus

1996 – present Associate Professor, Department of Mathematics, University of Puerto Rico, Mayagüez Campus

Teaching experience:

All courses at the undergraduate level. Universal Algebra, Lattice,Theory, Logic, and Numerical Methods of LinearAlgebra at the graduate level. Some introductory courses in Computer Science.

Research experience:

Universal Algebra, Lattice Theory, and Logic.

Other experiences:

1986 - 89 Associate Editor of Studia Logica

1984 - 87 Editor of the Bulletin of the Section of Logic of the Polish Academy of Sciences

1994 - present, Managing Editor of Studia Logica

Refereeing for the following journals:

Algebra and Logic, Algebra Universalis, Fundamenta Mathematicae, Mathematical Reviews, Reports on Mathematical Logic, Studia Logica

Current research interest:

Algebraic and lattice theoretic aspects of quasi-varieties and their connection with Logic; see items [19]-[47] of the list of publications.

Some invited talks:

1. *Universal Horn Classes and Their Connections with Logic*, Padova University, Padova, Italy, May 7, 1988.

2. *Deduction-like Theorem and its Applications*, University of Parma, Parma, Italy, May 14, 1988.

3. *Representing Lattices by Lattices of Quasivarieties. A Problem of Maltsev*,University of Florence, Florence, Italy, May 21, 1988.

4. *Relative Congruence Distributive Quasivarieties*,J. Attila University, Szeged, Hungary, August 25, 1988.

5. *Quasivarieties with Fraser-Horn Property*,Siberian Academy of Sciences, Novosibirsk, Russia, September 3, 1988.

6. *On Dedekind-Weierstrass-Rjabuhin Theorem*, Charles University Prague, Czecho-Slovakia, June 19, 1990.

7. *Quasivarieties of Kleene Algebras*,University of Bratislava, Donovaly, Czecho-Slovakia, September 7, 1990.

8. *Large Quasivarieties Generated by Small Algebras*, State University of New York, New Paltz, November 14, 1991.

9. *Lattices of Quasivarieties*, University of Illinois at Chicago, June 7, 1992.

List of publications:

The following superscripts denote co-authors: (1) M. E. Adams, (2) K. V.\\ Adaricheva, (3) A. Biela, (4) W. J. Blok, (5) J. J. Blaszczuk, (6) J. Czela-\\kowski, (7) M. Gould, (8) V. A. Gorbunov, (9) J. Schmid.

[1](5) *An axiomatization on M^n-counterparts for some modal calculi*, Reports on Mathematical Logic 6(1976), 3-6.

[2](5) *Modal logics connected with the systems $S4_n$ of Sobocinski*, Studia Logica 36(1977), 151-164.

[3] *On detachment-substitutional formalization in normal modal logics*, Studia Logica 36(1977), 165-171.

[4] *A note on incompleteness of modal logics with respect to neighborhood semantics*, Bull. Sect. Logic, Polish Acad. Sci., 7(1978), 185-190.

[5] *On strongly finite consequence operations*, Bull. Sect. Logic, Polish Acad. Sci. 8(1979), 87-94.

[6] *An example of a strongly finite consequence operation with 2_0 of standard strengthenings*, Studia Logica 39(1980), 375-379.

[7] *A variety generated by a finite algebra with 2^aleph_0 subvarieties*, Algebra Universalis 13(1981), 148-156.

[8] *On infinite subdirectly irreducible algebras in locally finite equational classes*, Algebra Universalis 13(1981), 393-394.

[9] *The lattice of strengthenings of a strongly finite consequence operation*, Studia Logica 40(1981), 177-193.[10] *Non-existence of a countable strongly adequate matrix semantics for neighbours of E*, Bull. Sect. Logic, Polish Acad. Sci. 10(1981), 170-176.

[11] *The degrees of maximality of the intuitionistic propositional logic and of some of its fragments*, Studia Logica 40(1981), 195-198.

[12] *Strong completeness with respect to finite Kripke models*, Studia Logica 40(1981), 249-252.

[13] *On finite approximability of ψ-intermediate logics*, Studia Logica 41(1982), 67-73.

[14](6) *Another proof that $ISP_I(K)$ is the least quasivariety containing K*, Studia Logica 41(1982), 343-345.

[15] *Concerning axiomatizability of the quasivariety generated by a finite Heyting or topological Boolean algebra*, Studia Logica 41(1982), 415-428.

[16](3) *On two properties of structurally complete logics*, Reports on Mathematical Logic 16(1982), 51-54.

[17] *There are 2^{aleph0} logics with the relevance principle between R and RM*, Studia Logica 2(1983), 49-61.

[18] *Cardinalities of proper ideals in some lattices of strengthenings of the intuitionistic propositional logic*, Studia Logica 42(1983), 173-177.

[19] *On distributivity of the lattice of subquasivarieties of a locally finite semi-simple arithmetical variety*, Algebra Universalis 19(1984), 130-132.

[20] *On subquasivariety lattices of semi-simple varieties*, Algebra Universalis 20(1985), 127-129.

[21] *On subquasivariety lattices of some varieties related with distributive p-algebras*, Algebra Universalis 21(1985), 62-67.

[22] *The subvariety lattice of the variety of distributive double p-algebras*, Bull. Austr. Math. Soc., 31(1985), 377-387.

[23] *The varieties of Heyting algebras whose lattice of subquasivarieties is distributive*, Bull. Polish Acad. Sci., Mathematics, 34(1986), 252-259.

[24] *On lattice identities satisfied in subquasivariety lattices of modular lattices*, Algebra Universalis 22(1986), 205-214.

[25](4) *On the lattice of quasivarieties of Sugihara algebras*, Studia Logica 45(1986), 275-280.

[26] *On atoms in the lattice of quasivarieties*, Algebra Universalis 24(1987), 32-35.

[27] *On equational classes of regular distributive double p-algebras of range 2*, in: Types of Logical Systems and the Problem of Truth (ed. B. Dyankov), Sofia-1988.

[28] *Finitely generated congruence distributive quasivarieties of algebras*, Fundamenta Mathematicae 133(1989), 47-57.

[29](6) *Congruence distributive quasivarieties whose finitely subdirectly irreducible it members form a universal class*, Algebra Universalis 27(1990), 128-149.

[30] *Relative congruence distributivity within quasivarieties of nearly associative f-algebras*, Fundamenta Mathematicae 135(1990), 77-95.

[31] *Finite bases for finitely generated, relatively congruence distributive quasivarieties*, Algebra Universalis 28(1991), 303-323.

[32] *A finite matrix whose set of tautologies is not finitely axiomatizable*,Reports on Mathematical Logic 25(1991), 83-90.

[33](6) *A deduction theorem schema for deductive systems of propositional logics*, Studia Logica 50(1991), 385-390.

[34](6) *A single quasi-identity for a quasivariety with the Fraser-Horn property*, Algebra Universalis 29(1992),10-15.

[35](2),(8) *Finite atomistic lattices that can be represented as lattices of quasivarieties*, Fundamenta Mathematicae 142 (1993), 19-43.

[36] *An answer to a question of D. Pigozzi*, Algebra Universalis 30(1993), 395-398.

[37](1) *Q-universal quasivarieties of algebras*, Proc. Amer. Math. Soc. 120(1994), 1053-1059.

[38](1) *Lattices of quasivarieties of 3-element algebras*, Journal of Algebra 166(1994),181-210.

[39](1) *Quasivarieties of distributive lattices with a quantifier*, Discrete Mathematics 135(1994), 15-28.

[40](1),(7),(9) *Quasivarieties of pseudocomplemented semilattices*, Fundamenta Mathematicae 146(1995), 295-312.

[41](1) *Joins of minimal quasivarieties*, Studia Logica 54(1995), 371-390.

[42](1) *Lattices of quasivarieties of finite-to-finite universal quasivarieties*, research completed. Abstract is published in: Abstracts of Notices of Amer. Math. Soc. 16(1995), p. 266.

[43](1) *List of published papers devoted to Priestley and/or natural dualities*, Studia Logica 56(1996), 277-290.

[44](6) *The parameterized local deduction theorem for quasivarieties of algebras and its application*, Algebra Universalis 35(1996), 373-419.

[45](2),(8) *Congruence properties of lattices of quasivarieties* (in Russian), Algebra and Logic (to appear).

[46](2),(8) *Algebraic atomistic lattices of quasivarieties* (in Russian), Doklady, Mathematics, Russian Academy of Sciences (to appear).

[47] *Degrees of maximality of the consequence operations determined by finite Sugihara matrices*, Notre Dame J. Formal Logic (submitted).

[48](6) *Deduction theorems within RM and its extensions*, Journal of Symbolic Logic (submitted).

Research related activities during the past 4 semesters:

Spring Semester of 1995

Title of the project: The complexity of the 4-valued RM extension.
Time released: 3 credits

Papers:

∑ *Quasivarieties of pseudocomplemented semilattices*,
Fundamenta Mathematicae 146(1995), 295-312 (co-authors: M.E. Adams,
M. Gould, and J. Schmid).

∑ *Congruence properties of lattices of quasivarieties* (in Russian),Algebra and Logic, accepted, (co-authors: K.V. Adaricheva and V.A. Gorbunov).

∑ *Degrees of maximality of the consequence operations determined by finite Sugihara matrices*, Notre Dame J. Formal Logic, submitted (the paper contains the main results of the research project conducted in the Spring of 1995).

Talks:

Universal Horn classes of graphs, 10mo Seminario Interuniversitario de Investigación Matemática, SIDIM'95, 25 de febrero 1995, Recinto de Rio Piedras.

Committees:

1. Member of the Professonal Improvement Committee, Department of Mathematics, UPR.
2. Member of the Graduate Committee, Department of Mathematics, UPR.
3. Member of the Library Committee, Department of Mathematics, UPR.
4. Editor of Studia Logica (Dutch-Polish Journal for Symbolic Logic).

Fall Semester of 1995

Title of the project: Some equivalents of the prime ideal theorem within ZF.
Time released: 3 credits.

Papers:

∑ *Lattices of quasivarieties of finite-to-finite universal quasivarieties*, Abstracts of Notices of Amer. Math. Soc. 16(1995), p. 266 (co-author: M.E.Adams).

∑ *Joins of minimal quasivarieties*, Studia Logica 54(1995), 371-390 (co-author: M.E. Adams).

∑ *Algebraic atomistic lattices of quasivarieties* (in Russian), Doklady, Mathematics, Russian Academy of Sciences, accepted, (co-authors: K.V. Adaricheva and V.A. Gorbunov)

Committees:
1. Member of the Professonal Improvement Committee, Department of Mathematics, UPR.
2. Member of the Graduate Committee, Department of Mathematics, UPR.
3. Member of the Library Committee, Department of Mathematics, UPR.

4. Editor of Studia Logica (Dutch-Polish Journal for Symbolic Logic).

Papers presented in Studia Logica:
- *H.A. Priestley, Natural dualities for varieties of n-valued Lukasiewicz algebras*, vol. 54, No. 3, pages 333-370.
- Ghilardi and M. Zawadowski, *Undefinability of propositional quantifiers in the modal system S4*, vol. 55, no. 2, 259-271.
- Sendlewski, *Axiomatic extensions of the constructive logic with strong negation and the disjunction property*, vol. 55, no. 3, 377-388.

Spring Semester of 1996

Title of the project: Deduction theorems within RM and its extensions.
Time released: 3 credits.

Papers:
- *The parameterized local deduction theorem for quasivarieties of algebras and its application*, Algebra Universalis 35(1996), 373-419 (co-author: J. Czelakowski).
- *List of published papers devoted to Priestley and/or natural dualities*, Studia Logica 56(1996), 277-290 (co-author: M.E. Adams).
- *On the domain and range of an iteration*, in preparation, (co-authors: A. Ehrenfeucht, J. Grace, and D. Silberger).

Committees:

1. Member of the Professonal Improvement Committee, Department of Mathematics, UPR.
2. Member of the Graduate Committee, Department of Mathematics, UPR.
3. Member of the Library Committee, Department of Mathematics, UPR.
4. Managing editor of Studia Logica (Dutch-Polish Journal for Symbolic Logic).
   Editing together with M.E. Adams the monothematic issue of Studia Logic (vol. 56, Nos. 1-2, January/March 1996) devoted to Priestley Duality Theory. The issue contains twelve papers of the authors from different countries.

Fall Semester of 1996

Title of the project: Lattice of quasivarieties of Sugihara algebras.
Time released: 3 credits.

Papers:
- *Deduction theorems within RM and its extensions*, Journal of Symbolic Logic, submitted, (co-author: J. Czelakowski); the paper contains main results of the research project conducted in the Spring semester of 1996.
- *Prime relations*, in preparation, (co-author: D. Silberger).
- *Quasivarieties of semilattices with involution*, in preparation (the paper contains the main results of the research project contucted in the Fall semester of 1996).

Committees:
1. Member of the Professonal Improvement Committee, Department of Mathematics, UPR.
2. Member of the Graduate Committee, Department of Mathematics, UPR.
3. Member of the Library Committee, Department of Mathematics, UPR.
4. Member of the SEED Money committee, Faculty of Art and Sciences, UPR.
5. Managing editor of Studia Logica (Dutch-Polish Journal for Symbolic Logic). Papers presented in Studia Logica:

- W. van der Hoek, J. Jaspers, and E. Thijsse, *Honesty in partial logic*, vol. 56, No. 3, 323-360.
- D. Vaggione, *Indecomposable congruence modular algebras*, vol. 57, Nos. 2-3, 239-241.

Vitae - Javier Echauz

Rango Académico: Catedrático Auxiliar

Contrato: Probatorio

EDUCACIÓN:

B.S.E.E., Universidad de Puerto Rico, Mayagüez, 1988
M.S.E.E., Georgia Institute of Technology, Atlanta, 1989
Ph.D., Georgia Institute of Technology, Atlanta, 1995

SERVICIO EN UPR-RUM: 9 años

1988 Licencia de Estudios
1990 Instructor
1991 Licencia de Estudios
1995 Catedrático Auxiliar

EXPERIENCIA DE TRABAJO:

Asistente Graduado de Investigación y co-instructor de seis cursos cortos sobre lógica difusa y redes neuronales, Georgia Institute of Technology, Atlanta, Georgia, 1991-1995

Ingeniero, E.I. du Pont de Nemours & Co., Wilmington, Delaware, verano 1991

Instructor, Departamento de Ciencias Naturales, Universidad del Sagrado Corazón, Santurce, Puerto Rico, verano 1989

CONSULTORÍA:

Emory/ Georgia Tech Biomedical Technology Research Center y
National Textile Center, Atlanta, Georgia, verano 1997

National Textile Center, Atlanta, Georgia, verano 1996

Traductor de electrotecnia, OMNI Resource Group, Atlanta, Georgia, 1992-presente

DÁDIVAS:

“Predicting Seizures Prior to Onset from Depth EEG in Patients with Mesial Temporal Epilepsy Using Wavelet Neural Networks,” Epilepsy Foundation of America, $40,000 (to UPRM $10,000), 7/1/98-6/30/99.

“Experiments in Brainwave-Based Control,” University of Puerto Rico - Mayagüez Campus, Industrial Affiliates Program, $2,997; 9/15/97-5/15/98.

“Detection of Seizures Prior to Clinical Onset in Depth Electrode Electroencephalographic Recordings from Patients with Mesial Temporal Epileptic Foci Using Wavelet Neural Networks,” Emory/Georgia Tech Biomedical Technology Research Center, $29,000, 7/1/97-6/30/98.

“Digital Biofeedback of Brainwave Spectra,” University of Puerto Rico - Mayagüez Campus, Industrial Affiliates Program, $2,700; 1/15/97-5/15/97.

“Neural Network Classification of Human EEG Via Chaotic Dimensionality,” Georgia Tech/Medical College of Georgia Biomedical Research Program, $14,200; 9/1/92-6/30/93.

PUBLICACIONES ÚLTIMOS 5 AÑOS:

J. Echauz, "Strategies for Fast Training of Wavelet Neural Networks," 3rd World Automation Congress, Alaska, May 11-13, 1998.

J. Echauz and V. Ramani, “Index fund trading with learning network advisors,” International Conference on Intelligent Information Systems (IIS’97). Grand Bahama Island, The Bahamas, Dec. 8-10, 1997. IEEE Computer Society Press, pp. 143-148.

J. Echauz and G. Vachtsevanos, “Separating Order from Disorder in a Stock Index Using Wavelet Neural Networks,” *Fifth Congress on Intelligent Techniques and Soft Computing (EUFIT’97)*. Aachen, Germany, Sept. 8-12, 1997, vol. 1, pp. 434-437.

J. Echauz and G. Vachtsevanos, "Classification of complex quantitative measures using elliptic and radial wavelet neural networks," in revision process for *Automation and Soft Computing, An International Journal.*

J. Echauz and G. Vachtsevanos, "A Corrected Average Squared Error Computation for Nonlinear Model Selection,” in submission process.

J. Echauz and G. Vachtsevanos, "Elliptic and radial wavelet neural networks" in *Proc. Second World Automation Congress*, Montpellier, France, May 27-30, 1996. TSI Press, vol. 5, pp. 173-179. This paper won the WAC'96 Best Paper Award in the category of Soft Computing.

J. Echauz, S. Kim, V. Ramani, and G. Vachtsevanos, "Neuro-fuzzy approaches to decision making: A comparative study with an application to check authorization," accepted for publication in *Journal of Intelligent and Fuzzy Systems*, 1997.

J. Echauz and G. Vachtsevanos, "Fuzzy grading system," *IEEE Transactions on Education*, vol. 38, no. 2, pp. 158-165, May, 1995.

G. Vachtsevanos, S. Kim, J. Echauz, and V. Ramani, "Neuro-fuzzy approaches to decision making: An application to check authorization from incomplete information," in *Proc. 3rd IEEE Mediterranean Symposium on New Directions in Control and Automation*. Limassol, Cyprus, July 11-13, 1995.

J. Echauz and G. Vachtsevanos, "Radial wavelet neural networks for electroencephalographic drug detection," in *Proc. 5th International Conference on Advances in Communication & Control.* Chania, Greece, June 26-30, 1995.

J. Echauz and G. Vachtsevanos, "Neural network detection of antiepileptic drugs from a single EEG trace," in *Proc. Electro 94 International Conference*. Boston, MA, May 10-12, 1994, pp. 346-351.

ORGANIZACIONES PROFESIONALES:

IEEE
Sociedad de Honor de Phi Kappa Phi
Sociedad de Honor de Tau Beta Pi
Society for Chaos Theory in Psychology and the Life Sciences

HONORES:

Premio WAC'96 Mejor Artículo en la Categoría de Soft Computing, Montpellier, Francia, 1996

Beca GTE, 1993-1994

Beca GEM para el Doctorado en Ingeniería, 1991-1992

Beca Graduada en Ingeniería Eléctrica Du Pont, 1991-1995

Beca del Presidente, Georgia Institute of Technology, 1988-1993

Beca para Estudios Graduados, Administración de Fomento Económico de Puerto Rico, 1988-1989

ACTIVIDADES DE DESARROLLO PROFESIONAL RELEVANTES:

Albert Harvey et al., “Proposal Writing Workshop,” Sala Eugene Francis, UPRM, Jan. 15, 1998.

Néstor Queipo, "Soft Computing," UPRM, Oct. 28, 1997.

Alistair Fraser, “WEB3: Managing Courses on the World Wide Web,”InterAmerican University, San Germán, June 6-8, 1997.

Nilda Ocasio, “Diseño de Exámenes Efectivos” Stefani, UPRM, Abr. 11, 1997.

Michael Frazier, “Fundamentals of Wavelets and Applications,” 4-day short course, Stefani, UPRM, Mar. 3-6, 1997.

María de los A. Medina, “Técnicas de ‘Assessment’ para la Enseñanza Efectiva” Stefani, UPRM, Abr. 19, 1996.

Nilda Ocasio, “Métodos y Técnicas de Enseñanza: Taller” Sánchez Hidalgo, UPRM, Abr. 13, 1996.

Richard Felder and Rebecca Brent, “Effective Teaching: A Workshop,” Mayagüez Hilton, Jan. 3-4, 1996.
Bernard Mohr and Bruce Naples,“Practical Techniques for the Development of Computer Assisted Multimedia Educational Modules Using Authorware Professional for Windows,” CAIDEL, Civil Eng., UPRM, Nov. 19-21, 1995.

Vitae - Shawn D. Hunt

Address:

Department of Electrical and Computer Engineering
412 Stefani Bld.
Recinto Universitario de Mayagüez
University of Puerto Rico
Mayagüez, Puerto Rico 00681-5000

Tel: (787) 832-4040 ext. 3654
Fax: (787) 831-7564
email: shawn@exodo.upr.clu.edu

Date of Birth: November 2, 1964

Academic Rank: Associate Professor (Full-Time)

Education:

Ph.D., Electrical Engineering, Michigan State University, 1992.

MSEE, Electrical Engineering, Michigan State University, 1989.

BSEE, Electrical Engineering, Tulane University, 1986.

UPRM Service: 5 1/2 years

1988-1992	Academic Leave of Absence.
1992-1995	Assistant Professor.
1995-present	Associate Professor

Academic Activities:

Courses Taught and Developed:

INEL 3105 Electrical Systems Analysis I
INEL 4102 Electrical Systems Analysis II
INEL 4075 Fundamentals of Electrical Engineering
INEL 4301 Communication Theory I
INEL 4505 Introduction to Control Systems
INEL 5309 Digital Signal Processing
INEL 5505 Linear System Analysis
INEL 6010 Elements of Statistical Communication Theory
INEL 6049 Multidimentional Signal Processing

Faculty and Department Committees:

Personnel Committee	(Department,1997-present)
Industrial Affiliates Program Committee	(Department, 1993-1997)
Communication Committee	(Department, Chair, 1992-present)
Control Systems Committee	(Department, 1992-present)
Graduate Committee	(Department, 1995-1997)
Curricular Revision Committee	(Department, 1995-1996)
Computational Resources Committee	(Faculty, 1995-present)

Funded and Supervised Research:

MS Theses and graduate research:

"Feed-forward Neural Networks for Isolated Speech Recognition Using Four different Back-propagation training Algorithms," by Rafael Torres, 1996. Funded by NSF grant.

"Color Image Compression using Vector Quantization and Neural Networks" , by Julio Hernandez, 1996.

"Automatic Sub-pixel classification of AVHRR images using Neural Networks," by Ricardo Figueroa, in progress. Expected date of completion 1998. Funded by NASA grant.

Undergraduate Research:

"Design of a Speech Recognition System," by Miguel Rivera, Fall semester 1993, ICOM 4998.

"Automatic Speech Recognition for a Mobile Robot," by Jose Santiago, Fall semester 1993, INEL 4998.

"Lazarus Voice Interface," by Edgar Cuevas, Spring semester 1994, INEL 4998.

Faculty supervisor for "Performance Data Analysis Tool," by Alex Lopez, summer internship at ATT, 1995, INEL 4048.

Faculty supervisor for "Summer internship at NASA Goddard Space Flight Center and Stanford Telecom," by Angel Torres, summer 1995, INEL 4048.

Faculty supervisor for "Summer internship at Cellular One," by Carlos Aponte, summer 1995, INEL 4048.

"Speech Compression using Neural Networks," by Hector Vargas, Iñaki Olivares, and Ricardo Figueroa, fall semester 1994, spring semester 1995, INEL 4998, and one student funded with NSF grant.

"Neural Networks for Subpixel Classification," by Ricardo Figueroa, fall semester 1995, spring semester 1996, student funded with NASA grant.

"Resolution Enhancement for JPEG still compressed Images," by Alex Lopez and Angel Torres, fall semester 1995, spring semester 1996, INEL 4998 and one student funded with NASA Grant.

"Lossless Image compression with Feedforward Neural Networks," by Iñaki Olivares, fall semester 1995, spring semester 1996, student funded with NASA grant.

"Linear Adaptive Predictive Coding for AVHRR Image Compression," by Felix Ayende, fall semester 1996, student funded with NASA grant.

"Huffman Coding and Delta Modulation for AVHRR Image Compression," by Juan Borrero and Felix Fontan, fall semester 1996, spring semester 1997, both students funded with NASA grant.

"Nonlinear Adaptive Predictive Coding for AVHRR Image Compression," by Felix Ayende, spring and fall semesters 1997, student funded with NASA grant.

"A user graphical interface for an AVHRR Image Compression in C," by Luissette Ramirez, fall semester 1997, INEL 4998.

Funded Proposals:

CO-PI in "Unsupervised Classification System for Hyperspectral Data Analysis," sponsored by DEPSCOR, 3 years 8/15/97-8/14/2000, $328,180.

CO-PI in "Tropical Center for Earth and Space Studies", sponsored by NASA, 5 years starting July 1995, $5.5Million.

"Resolution Enhancement of JPEG still Images," sponsored by the Industrial Affiliates Program, 1 year starting July, 1995, $3,000.

CO-PI in "Development of a Computer Engineering Research Environment at UPR-Mayagüez", sponsored by the National Science Foundation, 5 years starting July 1994, $1.5Million.

"Speech Compression using Neural Networks," sponsored by the Industrial Affiliates Program, 1 year starting July, 1994, $3,000.

" Automatic Speech Recognition for a Mobile Robot," sponsored by the Industrial Affiliates Program, 1 year starting July, 1993, $900.

Publications:

Ricardo Figueroa, and Shawn Hunt, "Subpixel Analysis of AVHRR Images," To appear in Proceedings of the University Research Centres Technical Conference Proceedings, February 1998.

Luis O. Jimenez, Ricardo Figueroa, and Shawn Hunt, "Supervised Classification of hyperspeccctal Remote Sensed Data with the use of Parametric Pursuit and Arificial Neural Networks," To appear in International Symposium on Spectral Sensing Research 1997.

A. Lopez, A. Torres, and S.D. Hunt, "JPEG Post Processing Image Enhancement," IEEE International Conference on Neural Networks, Houston, TX, June 9-12, 1997.

S.D. Hunt, A. Lopez, and A. Torres "Nonlinear Post Processing Image Enhancement," NASA University Research Centers Technical Advances in Education, Aeronautics, Space, Autonomy, Earth and Environment, NASA ACE Center Series, Vol. 1, pp.349-354, February, 1997.

S.D. Hunt, "A Nonlinear Adaptive Predictor for Speech Compression," IEEE International Conference on Neural Networks, vol.4, pp. 1998-2002, June 1996.

S.D. Hunt, "Project r: Sample Rate Converter," *Recording Magazine*, July 1996.

S. D. Hunt, and J.R Deller Jr. , "Selective Training of Feedforward Artificial Neural Networks Using Matrix Perturbation Theory," *Neural Networks*, vol.8 no.6 pp.931-943, 1995.

W. Martínez, J. Borges, N. J. Rodríguez, and S.D. Hunt, "A Natural Language Processor for a Speech Computer Interface," IEEE International Conference on System, Man and Cybernetics, October 1995.

S.D. Hunt and B. Ray, " Neural Network Based control of a PWM Buck DC/DC converter", Symposium on Intelligent Systems in Communications and Power, February 1994.

J.R Deller Jr. , and S. D. Hunt, "Faster, higher quality training of feedforward neural networks by selective updating," 1994 IEEE International Symposium on Circuits and Systems, pp. 435-438, June 1994.

S. D. Hunt, and John R. Deller Jr., "Training of Feedforward Artificial Neural Networks Using Selective Updating," Midwest Symposium on Circuits and Systems, pp. 1189-1192, Aug. 1993.

John R. Deller, and Shawn Hunt, "A Simple 'Linearized' Learning Algorithm which Outperforms Back-Propagation," IEEE Conference on Neural Networks, vol. III, pp.133-138, 1992.

Shawn Hunt, and Marvin Siegel, "Signal Processing for a Non-contacting Heartbeat Detector and Estimator," IEEE Conference on Biomedical Engineering, 1988.

Vitae - Luis O. Jimenez-Rodriguez

Department of Electrical and Computer Engineering
University of Puerto Rico at Mayaguez
P.O. Box 5000
Mayaguez, Puerto Rico, 00681-5000
Tel. (787) 832-4040 Ext. 3031, 3094
FAX (787) 831-7564
Email: jimenez@exodo.upr.clu.edu

Date of Birth: January 2, 1967
Academic Rank: Assistant Professor

Dr. Luis O. Jimenez received the BSEE from University of Puerto Rico at Mayaguez, in 1989. He received his MSEE from University of Maryland at College Park in 1991 and his PhD from Purdue University in 1996. Currently he is an Assistant Professor of Electrical and Computer Engineering at the University of Puerto Rico, Mayaguez Campus. He is the Co-Director of the Laboratory of Applied Remote Sensing and Image Processing (LARSIP). His research interest include Pattern Recognition, Remote Sensing, Feature Extraction, Artificial Intelligence, and Image Processing.

Dr. Jimenez is a associate member of the IEEE. He is also member of the Tau Beta Pi and Phi Kappa Phi honor societies.

EDUCATION:

B.S., Electrical Engineering, University of Puerto Rico, Mayaguez, P.R., 1989

M.S., Electrical Engineering, University of Maryland, College Park, Maryland, 1991.

Ph.D., Electrical Engineering, Purdue University, West Lafayette, Indiana, 1996. Thesis under Prof. David A. Landgrebe on “High Dimensional Feature Reduction Via Projection Pursuit.”

UPRM:

1993 - Instructor-Study Leave
1994 - Instructor-Study Leave
1995 - Instructor-Study Leave
1996 - Assistant Professor

REGISTRATION:

EIT-Puerto Rico

SCHOLARSHIPS:

Recipient of the National Center for the Graduate Education for Minorities (GEM) fellowship, from August 1989 to May 1991.

Recipient of Puerto Rico Economic Development Office Fellowship from August 1989 to May 1991.

Recipient of GTE fellowship from August 1991 to August 1995

Recipient of Puerto Rico Economic Development Office Fellowship from August 1994 to May 1995.

PUBLICATIONS:

Accepted Journal Publications:

L. O. Jimenez and D.A. Landgrebe, "Supervised Classification in High Dimensional Space: Geometrical, Statistical, and Asymptotical Properties of Multivariate Data," *IEEE Transactions on Systems, Man and Cybernetics*, accepted.

Submitted Journal Publications:

L. O. Jimenez and D.A. Landgrebe, "Hyperspectral Data Analysis and Feature Reduction Via Projection Pursuit," *IEEE Transactions on Geoscience and Remote Sensing*, submitted.

L. O. Jimenez, "Asymptotical Problems of Spectral Distances in Hyperspectral Data" *IEEE Transactions on Geoscience and Remote Sensing*, submitted.

Technical Reports:

L.O. Jimenez and D.A. Landgrebe , "High Dimensional Feature Reduction Via Projection Pursuit," School of Electrical Engineering Purdue University, Technical Report, TR-ECE 96-5, April 1996.

L. O. Jiménez, J. L. Cruz-Rivera, R. E. Vásquez-Espinosa, " Fingerprint Verification System: A Vectorial Approach," Technical Report TR-97-01, Biomega Project, February 1997.

J.L. Cruz-Rivera, L.O. Jimenez, R. Vasquez-Espinosa, "Algorithmic and Architectural Development of a Fingerprint Verification System," Technical Report TR-97-02, Biomega Project, May 1997.

L.O. Jimenez, J. L. Cruz-Rivera, R. Vasquez-Espinosa, "Algorithmic and Architectural Development of a Fingerprint Verification System," Technical Report TR-97-02, Biomega Project, April 1998.

L.O. Jimenez, M. Velez-Reyes, "Clustering and Subset Selection Research for Hyperspectral Data Analysis," Technical Report, TR-97-01, U.S. Army Topographic Engineering Center, Department of the Army, December 1997.

L.O. Jimenez, M. Velez-Reyes, "Clustering and Subset Selection Research for Hyperspectral Data Analysis," Technical Report, TR-98-01, U.S. Army Topographic Engineering Center, Department of the Army, March 1998.

Publications in Conference Proceedings:

L. O. Jimenez and D.A. Landgrebe, "High Dimensional Feature Reduction Via Projection Pursuit," presented at the *International Geoscience and Remote Sensing Symposium (IGARSS'94*), Pasadena California, 1994.

L. Jimenez and D.A. Landgrebe, "Projection Pursuit for High Dimensional Feature Reduction: Parallel and Sequential Approaches," presented at the *International Geoscience and Remote Sensing Symposium (IGARSS'95*), Florence Italy, July 10-14, 1995.

L. Jimenez and D.A. Landgrebe, "Projection Pursuit in High Dimensional Data Reduction: Initial Conditions, Feature Selection and the Assumption of Normality," presented at the *IEEE International Conference on Systems, Man and Cybernetics*, Vancouver Canada, October 1995.

L. O. Jimenez, "Supervised Classification Techniques for Hyperspectral Data," *1997 NASA University Research Center's Technical Conference on Education, Aeronautics, Space, Autonomy, Earth and Environment (URC-TC'97),* Albuquerque, New Mexico, February 16-19, 1997.

L. O. Jimenez, "Supervised Classification Techniques for Hyperspectral Remote Sensing Data," presented at *Geomatics in the Era of RADARSAT (GER'97) Conference*, Ottawa Canada, 1997.

L. O. Jimenez, "Image Analysis: An Educational Environment using MultiSpect," presented at *ADMI Annual Workshop*, Washington D.C., 1997.

L.O. Jimenez, "On the Use of Remote Sensing for Land Use and Land Cover," presented at *First Congress on Ecoturism*, Jarabacoa, Dominican Republic, June 1997.

L.O. Jimenez, and Y. Chaar, "Clustering Algorithm for Hyperspectral Data," *1998 NASA University Research Center's Technical Conference on Education, Aeronautics, Space, Autonomy, Earth and Environment (URC-TC'98),*

L.O. Jimenez, R. Figueroa, and S. Hunt, "Supervised Classification of Hyperspectral Remote Sensed Data with the use of Parametric Projection Pursuit and Artificial Neural Networks," *ISSSR 1997*, San Diego, California, December 1997.

M. Velez-Reyes, L.O. Jimenez, F. Pagan, and G. Fernandez, "Subset Selection for the Analysis of Hyperspectral Data," *ISSSR 1997*, San Diego, California, December 1997.

RESEARCH PROPOSALS:

(1) **Land Cover and Land Use Change Research at Two Sensitive Sites in Puerto Rico and its Application to Water Quality Modeling**, to NASA Land Cover and Land Use Change Program, July 1996. (Not Funded).
Principal Investigators:
Dr. Luis O. Jimenez
Prof. Linda L. Velez-Rodriguez, MS, PE, PLS
Co-Investigator:
Luis J. Olivieri, Research Assistant

(2) **Modeling Nonpoint Source Pollution using Remote Sensing, GIS, at the Loiza River Watershed**, to CBAG, September 1996. (Not Funded).

Principal Investigator:
Luis J. Olivieri, Research Assistant
Co-Investigators:
Dr. Luis O. Jimenez
Prof. Linda L. Velez-Rodriguez, MS, PE, PLS

(3) L.O. Jimenez, J.L. Cruz, and R. Vasquez, **Fingerprint Verification System: A Vectorial Approach.** Biometrics Imagineering, Inc.,
Funded: January 1997 to July 1998, $228,989.87

(4) **Clustering and Subset Selection Research for Hyperspectral Data Analysis**, Funded by Topographic Engineering Center, October 1997 to October 2000. Funds: $83,611/1st year, $114,772/2nd year, $116,479/3rd year.
Principal Investigator: Dr. Luis O. Jimenez.
Co-Investigator: Dr. Miguel Velez-Reyes.

(5) **Validation of Modis Oceanic Data Products from the Caribbean Region**, to NASA's Mision To Planet Earth Program, May 22, 1997. Total amount required: $572,650.00 (Not Funded).
Principal Investigator:
Luis O. Jimenez, Ph.D.
Co-Investigators:
Fernando Gilbes, Ph.D.
Ariel Sepulveda, Ph.D.
Miguel Velez, Ph.D.

(6) **Unsupervised Classification Algorithms for Hyperspectral Data Analysis**, Funded by DEPSCoR, October 1997 to October 2000. Funds: $126,333/1st year, $133,209/2nd year, $130,939/3rd year.
Principal Investigator: Dr. Luis O. Jimenez.
Co-Investigators:
Dr. Miguel Velez-Reyes.
Dr. Shawn Hunt.

(7) **Caribbean Earth Science Information Institute**, to NASA's Mision To Planet Earth Program, July 1997. Total amount required: $3,583,977.00 (Not Funded).

Principal Investigator: Rafael Fernandez-Sein.
Co-Investigators:
Dr. Luis O. Jimenez.
Dr. Fernando Gilbes.
Dr. Jorge I. Velez Arocho.
Dr. Javier Arroyo.
Dr. Salvador Salas.
Prof. Linda Velez.
Prof. Luis Olivieri.
Pieter Van DerMeer, GIS Specialist.
Dr. John Krummel, Argonne National Laboratory.
Dr. John Schell, Raytheon E-Systems.

(8) **Partnepship for Spatial and Computational Research**, to NASA's Mision To Planet Earth Program, March 1998. Total amount required: $5,000,000.00 (Pending).

Principal Investigator: Dr. Ramon Vasquez.
Co-Investigators:
Dr. Luis O. Jimenez.
Dr. Pamela Brown.
Prof. Linda Velez.
Prof. Luis Olivieri.
Pieter Van DerMeer, GIS Specialist.

(6) **Remote Sensing Data Analysis: A Comparison between Statistical Pattern Recognition and Neural Network Methods**, to IAP, Fall 1997.

Principal Investigator:

Dr. Luis O. Jimenez

MEMBERSHIP:

IEEE member.

HONORS:

Tau Beta Pi Honor Society member, Phi Kappa Phi Honor Society member.

COURSE TAUGHT:

Fall 1996:	INEL 4075, Fundamentals of Electrical Engineering INEL 6087, Artificial Intelligence: Techniques and Applications
Spring 1997:	INEL 4075, Fundamentals of Electrical Engineering INEL 6007, Introduction to Remote Sensing
Fall 1997:	INEL 4301, Telecommunication Theory I
Spring 1998:	INEL 6007, Introduction to Remote Sensing INEL 4301, Telecommunication Theory I

COURSES DEVELOPED:

INEL 5315, Theory of Communications II.
INEL 6XXX, Digital Communication

Proposals Awarded/Leveraged Funding:

L.O. Jimenez, J.L. Cruz, and R. Vasquez, **Fingerprint Verification System: A Vectorial Approach.** Biometrics Imagineering, Inc., January 1997 to July 1998, $228,989.87

SHORT COURSES GIVEN:

1. "Computer Vision System." Offered to ABBOTT Puerto Rico Operation, October 1996.

2. "Image Processing and Analysis System." Biometrics Imagineering Inc., February 1997.

3. "Hyperspectral Data: Characteristics and Analysis." Symposium on Caribbean Geology, University of Puerto Rico at Mayaguez, February 1997.

4. "New Trends in OCR." Offered to ABBOTT Puerto Rico Operation, December 1997.

5. "Introduction to Remote Sensing." Laboratory of Applied Remote Sensing and Image Processing, University of Puerto Rico at Mayaguez, January 1997.

WORKSHOP TAKEN:

1. "Fuzzy Logic and Intelligent Systems." NASA URC-Technical Conference, February 1997.

2. "Introduction to GIS", *Geomatics in the Era of RADARSAT (GER'97) Conference*, Ottawa Canada, June 1997.

3. Modeling Remote Sensed Data, *Geomatics in the Era of RADARSAT (GER'97) Conference*, Ottawa Canada, June 1997.

4. "Generic Object Recognition." Computer Vision and Pattern Recognition's 97, June 1997.

5. Introduction to (San diego) ISSSR97

6. Hyperspectral ... (San Diego) ISSSR97

Panel Discussion:

"Integration of Academic Research, Federal Agencies Requirements, and Private Enterprises in Multispectral and Hyperspectral Images," ISSSR'97, December 15, 1997, San Diego California.

Committees' Membership:

1. Communication System Committee (From: Fall 1996)
2. Dean's Rule Committee (Fall 1996-Fall 1998)
3. ECE Graduate School Committee (Fall 1997-Fall 2000)

STUDENTS:

Graduate Thesis:

Iñaki Olivares, "Fingerprint Verification System Software."

Yamil Chaar, "Unsupervised Classification Algorithms for Hyperspectral Data Analysis."

Graduate Special Topics:

Joseph Cortiñas, "Remote Sensing Data Analysis of the Puerto Rico's South West Region."

Undergraduate Projects:

Carlos Reyes, "Fingerprint Compression Systems, A Comparison."

Antonio Juarbe-Toledo, “Remote Sensing Data Analysis of the Añasco’s Region.”

ADVISOR:

1997 - present. Computer Engineering Student Asociacion.

RESEARCH INTEREST:

Pattern Recognition, Computer Vision, Artificial Intelligence, Remote Sensing, and Image Processing.

Vitae - Octavian Nicolio

ADDRESS:

Associate Professor
Department of Mathematics
University of Puerto Rico- RUM
Mayaguez, PR 00681

EDUCATION:

1994 Ph.D. in Applied Mathematics, Wichita State University, Wichita, KS 66720.

1991 Master of Science in Computer Science, Indiana University, Bloomington, IN 47405.

1989 Master of Arts in Mathematics, Indiana University, Bloomington, IN 47405.

FOREIGN LANGUAGES: English, French, Spanish, German, Romanian.

COMPUTER LANGUAGES:

C/C++, JAVA, PASCAL, LISP, PROLOG, FORTRAN, MATLAB, MAPLE.

AREAS OF RESEARCH:

Applied Mathematics: Partial differential equations (theory and numerical meth.)Computer Science: Compiler theory

RESEARCH GRANTS:

Summer 1996 "Numerical computations of the ligand/blocker problem"
Dept. Physics, Politecnico di Torino, Italy.

1995 "Seed Money", Research grant in Crack Detection,
University of Puerto Rico, Mayaguez, PR.

Summer 1994 Research grant in mathematical modeling in Fluid Mechanics,
Wichita State University, Wichita, KS.

SELECTED PUBLICATIONS:

Nicolio, O. - "Steady flows of opposite vorticity,"Proceedings of the fifth Pan American Congress of Applied Mechanics, 1997.

Elcrat, A and Nicolio, O. - "Continuity of the profile function of a steady ideal vortex flow," Advances in Geometric Analysis, International Press, 1995.

Elcrat, A., Isakov, V. and Nicolio, O. - "Finding a surface crack from boundary measurements," Journal of Inverse Problems, vol. 11, 1995.

Elcrat, A. and Nicolio, O. - "Iteration for steady vortices in rearrangement classes," Journal of Nonlinear Analysis, vol. 24, 1995.

RESUME: Thomas L. Noack

Date of Birth: January 24, 1936

Academic Rank: Professor (Full-Time)

EDUCATION:

B.S., Electrical Engineering, Iowa State University, Ames, Iowa, 1956

M.S., Electrical Engineering, Iowa State University, Ames, Iowa, 1960

Ph.D., Electrical Engineering, Iowa State University, Ames, Iowa, 1963

UPRM SERVICE: 11 Years

1982 - Professor

EXPERIENCE:

Member of Technical Staff, AT&T Bell Laboratories, Liberty Corner, NJ, Summer 1988

Consultant, contractor software development, Loveland, Colorado, 1981 to 1982

Development Engineer, Hewlett-Packard Corporation, 1975 to 1981

Elected Council Member, City of Loveland, Colorado, 1978 to 1982

Assistant and Associate Professor, Department of Electrical Engineering, University of Missouri, Rolla, Mo., 1965 to 1975

Member of Technical Staff, Bell Telephone Laboratories, North Andover, MA, Summer 1968

Research-Specialist, Inertial Guidance, Rockwell International, 1963-1965, Summers 1960, 1961, 1966, 1967

Instructor, Department of Electrical Engineering, Iowa State University, 1956 to 1963

Ensign and Lt. (j.g.), Shipboard Communications Officer, U.S. Navy, 1957 to 1959

CONSULTING:

Hewlett-Packard, Aguadilla, PR, Taught UNIX short course, Spring 1989

REGISTRATION:

Puerto Rico (Current)
Colorado (Current)
Missouri (Original registration)

PUBLICATIONS: None in last five years

MEMBERSHIPS:

IEEE, Senior Member
ACM

HONORS:

Sigma Xi
Eta Kappa Nu

Collins Radio Graduate Assistantship, 1956 to 1957

OTHER DUTIES:

Director, UNIX Laboratory (Departmental, Extra compensation)

Coordinator, ABET Preparation Committee (Departmental)

Coordinator, Computer Engineering Software Committee

Member, Departmental Planning Committee

Member, Computational Resources Committee (Faculty of Engineering)

PROFESSIONAL DEVELOPMENT ACTIVITIES:

NASA-ASEE Summer Faculty Fellowship, Goddard Space Flight Center, Summers 1973 and 1974

Faculty Briefing, AT&T Bell Laboratories, October 1987

UNIX and C Language, UPRM, December 1984

RESUME: Ortiz, Jorge L.

Date of birth: December 16, 1952
Academic rank: Professor, full time
Email: jortiz@exodo.upr.clu.edu

EDUCATION:

Ph.D., University of Houston, 1984
MSEE,University of Puerto Rico,1978
BSEE,University of Puerto Rico,1976

SERVICE ON FACULTY: 18 years

OTHER RELATED EXPERIENCE:

Associate Dean of Engineering - Academic Affairs
August 1992- November 1993

Assistant Dean of Engineering - Academic Affairs
October 1989-August 1992

Acting Assistant Dean of Engineering -
Academic Affairs,
January 1989-October 1989

Associate Director - Administrative Affairs,
Spring 1987 - Fall 1988

Acting Associate Director of the
Electrical and Computer Engineering
Department, Spring 1986

Associate Professor, University of Puerto Rico, 1987

Assistant Professor, University of Puerto Rico, 1984

Instructor, University of Puerto Rico, 1983-84

CONSULTING:

1. Teaching review courses in Electronics and Control for the Professional Engineering Examination
2. Digital Equipment Company
3. Expert Witness in Electronic and Communications Cases
4. Electrical System Design

REGISTRATION: Puerto Rico - Professional Engineer Lic 8170

SCIENTIFIC AND PROFESSIONAL SOCIETIES:

IEEE, Tau Beta Pi, Eta Kappa Nu,
"Colegio de Ingenieros y Agrimensores de Puerto Rico" (Lic 8170)

HONORS AND AWARDS:

Who is Who Among Hispanic Americans 1991-92
Who is Who in Science and Engineering 1996-97

PROFESSIONAL DEVELOPMENT ACTIVITIES:

1. Senior appointments in 1992, 1994, and 1996 in the NAVY ASEE Summer Faculty Program in the Naval Training System Center, Orlando, Fla. Research work in simulation.

2. One week workshop in "Local Area Networks, Summer 1989, Washington, D. C.

3. Participation in the 1988 NAVY/ASEE Summer Faculty Fellowship Program" in the Naval Surface Warfare Center, Dahlgren, Virginia. Research work was in Fault-Tolerant Processors

4. Participation in the "1987 NASA/ASEE Summer Faculty Fellowship Program" in Johnson Space Center, Houston, Texas. Research work was in Fault-Tolerant Processors using INMOS Transputers.

5. Participation in the "1986 NASA/ASEE Summer Faculty Fellowship Program" in the National Space Technology Laboratories in the Area of Remote Sensing.

TEACHING AND RESEARCH INTEREST:

Knowledge-based systems, expert systems, artificial intelligence, microprocessors interfacing, assembly and C language programming, digital design, electronics, and Systems Engineering

RESUME: Hamed Parsiani

Date of Birth: January 11, 1948
Academic Rank: Professor (Full-Time & Tenured)

EDUCATION:

Ph.D. in Electrical Engineering, Texas A&M Univ., College Station, Texas, 1979.
M.E.E. in Electrical Engineering, Texas A&M Univ., 1973.
B.S. in Electrical Engineering, Oregon State Univ., Corvallis, Oregon, 1971.
B.S. in Mathematics, Oregon State Univ., 1970.

UPRM SERVICE: 12 Years

1986 - Associate Professor at UPRM
1993 - Professor at UPRM
1995-1996 sabbatical leave working at the Image Compression Lab., Kodak Com., Rochester, N.Y.
1997-present at UPRM

OTHER DUTIES:

Grant evaluator for: University of South California which submitted research proposal to Hewlett-Packard, and Lockheed Martin Missile & Space, on the topic of High Quality Image and Video Processing and Encoding (1996).

Technical paper referee for the:

1) 36th Midwest Symposium on Circuits and Systems
2) International Journal of Computers and Electrical Engineering
3) Image Communications Journal

Technical Program Chairman and Co-organizer: of First Puerto Rico Symposium on Intelligent Systems in Communications and Power (SISCAP-94) , Feb.21-23,94.

1993 P.R. Western Regional Science Fair judge, for engineering and mathematics.

Academic committees served: chairman of Communication com., member of graduate committee.

RESEARCH:

Kodak Company, Image Compression Lab, Rochester, N.Y., 95-96 & 97-98

NASA research, Univ. of Puerto Rico, 1995- present

CISE-NSF research, Univ. of Puerto Rico, 1989- present

Bell communications Research, Red Bank, N.J., Summers:87,88, 89,91 and Winters: 87,88.

Intermetrics Incorporated, Pearland, Texas, Navigation System verification for the descent phase of the space shuttle Columbia, summer 79.

Texas A&M Univ., NASA research grant # NGC 1374, A navigation algorithm for a single channel low-cost Global Positioning System receiver, (Ph.D. thesis) June 1977 to June 1979.

HONORS:

Eta Kappa Nu

PUBLICATION:

1) Hamed Parsiani, Paul Roman , "Near lossless Iterated Block Matching Fractals Image Compression", Proceedings of URC-TC'98 Conference, Huntsville, Alabama, Feb. 22-25, 1998.
2) Hamed Parsiani, William Navas, "Advances in Weighted Finite Automata & Matching Pursuits in Image Compression", to be submitted to Midwest Symp. on Circuits and Systems, MWSCAS' Aug. 9-12, 98.
3) Hamed Parsiani, "Analysis of Iterated Function System Fractals for Image Compression", Proceedings of the 21st International Conference on Computers & Industrial Engineering (ICC&IE- 97), San Juan, P.R.
4) Hamed Parsiani, "Analysis of Iterated Block Matching Fractals for Image Compression", Proceedings of the 21st International Conference on Computers & Industrial Engineering (ICC&IE- 97), San Juan, P.R.

5) Hamed Parsiani, William Navas, “Recent Progress in Fractal Compression” , Proceedings of First ADMI Conference on Computing at Minority Institutions, ADMI’97.

6) Hamed Parsinai, William Navas, “Weighted Finite Automata Fractal Compression” , Proceedings of the 8th International Conference on Signal Processing Applications & Technology ICSPAT’97.

7) Hamed Parsiani, Ricardo Garcia, “State of the Art Iterated Block Matching Fractals in Image compression”, Proceedings of Midwest Symposium on Circuits and Systems, MWSCAS’97.

8) Hamed Parsiani, Ricardo Garcia, “Iterated Block Matching Encoder/Decoder for Image Compression”, Proceedings of Computing Research Conference, CRC’97.

9) Oscar Misla, Hamed Parsiani, “Fuzzy Logic in Image Compression”, Proceedings of 31 ACS Junior Tchnical Meeting, 3/9/96.

10) Oscar Misla, Hamed Parsiani, “Codebook Design Limitations of Fuzzy C-Means. Algorithm”, Proceedings of Computing Research Conference, CRC’96, April 19, 1996.

11) Oscar Misla, Hamed Parsiani, “Crisp and Fuzzy C-Means Algorithm Analysis”, Proceedings of First ADMI Conference on Computing at Minority Institutions, ADMI’96, July 23-28, 1996.

12) Hamed Parsiani, Oscar Misla, “Fuzzy Class Learning Vector Quantizer in Image Compression”, Proceedings of Midwest Symposium on Circuits and Systems, MWSCAS’96, Iowa State University, August 18-21, 1996.

13) Hamed Parsiani, Oscar Misla, “Computationally Efficient Fuzzy Class Learning Vector Quantizer in Image Compression”, Proceedings of the 7th International Conference on Signal Processing Applications & Technology ICSPAT’96, Boston Massachusetts, USA, October 7-10, 1996.

14) Hamed Parsiani, "Color Image and Video Compression Modules for Signal Processing Worksystem (SPW)

15) Hamed Parsiani, "Isolated Noise Detection and Reduction in Color Images". This paper is accepted for presentation and subsequent publication in the Proceedings of "36th Midwest Symposium on Circuits and Systems", Aug. 16-18, 1993, Detroit, Michigan.

System Simulation Software". This paper will be submitted for presentation in the 24th COPIMERA congress, Oct. 3-8, 1993, in San Juan, P.R., and subsequently will be published in its Proceedings.

RESEARCH GRANTS:

“Performance Study of Several Commercial Motion Imaging Compression Solutions”, Kodak company Rochester, N.Y. and UPRM-IAP, $4985, Aug. 97 - April 98.

“Tropical Center for Earth and Space Studies”, as a Research collaborator, NASA-URC, Goddard Flight Center, NASA grant for $6,438,693, with UPR matching fund for $1,904,861, 1995-2000 .

"Enhancement of the Computer Engineering Academic and Research Program at UPRM" as Research Collaborator, National Science Foundation, Washington, D.C. $ 1.3 M , October 1989 thru. September 1994, and its renewal from 1994 thru 1999.

" ISO Still Image Coding, Extensions and Alternatives to the Standard", Bell Communications Research, $14,170.00, for Jan 17 to May 17,1989.

EQUIPMENT & CONFERENCE GRANTS:

"Telecommunication Switching System Laboratory", Bell Communications Research, at $58,200.00, Feb. 1989.

"The First Puerto Rico Symposium on Intelligent Systems in Communications and Power" (SISCAP-94), Feb.21-23 1994. AT&T $13,000.00, Motorola $10,000.00, Raytheon $ 5,000.00, Bellcore $ 2,000.00, Avon$ 2,000.00

"Fiber Optics Laboratory, phase I", AT&T Foundation Grant, $12,264.00, Oct. 1989.

"Development of a Communication System Simulation Research Lab", U.S. Defense Department University Research Instrumentation Program. Granted $49,796.63 for fiscal year 1988-89.

CONFERENCES PRESENTED:

a) Presentation on the theory of Fractal Compression to the technical members of Kodak Compression Lab, May 10, 1996.
b) Presentation on Fuzzy Logic and Fractal Compression to our UPRM NASA research project advisory committee at the RUM, 96,97,98

c) Presentation on Fuzzy Logic and Fractal Compression to our UPRM NSF research project advisory committee at the RUM, 96,97.
d) Presentation on “Fractal Compression” to Image Science Division of Kodak, on Aug., 1996.

Vitae - Manuel A. Pérez Quiñones, D.Sc.

Assistant Professor
Department of Electrical and Computer Engineering
University of Puerto Rico-Mayagüez
PO Box 5000
Mayagüez, Puerto Rico 00681
Phone: (787) 832-4040, ext. 3097
Email: perezm@acm.org

Education

Doctor of Science, May 1996, GPA 3.62, The George Washington University, Washington, DC
Major: Software and Systems; Minors: Artificial Intelligence, Psychology
Dissertation Title: Conversational Collaboration in User-Initiated Interruption and Cancellation Requests
Advisor: Dr. John L. Sibert

Masters of Science, 1987, GPA 3.9, Ball State University, Muncie, Indiana
Major: Computer Science
Thesis: A Language for Interactive Computer Graphics Programming

Bachelor of Arts, 1983, GPA 3.5, Ball State University, Muncie, Indiana
Major: Computer Science; Minor: Foundations of Business

Publications

Pérez-Quiñones, Manuel A., & Sibert, J. L. (1997) "Modular Dialogue Units: A Software Architecture for Programming Human-Computer Dialogues", accepted for publication at Proceedings of HCI International, 1997.

Pérez-Quiñones, Manuel A. (1997) "Another Interpreter-Based Approach to the Programming Language Course", accepted for presentation at ADMI 97 - Increasing Diversity in Research and Education, Washington DC, May 1997.

Borges, José A., Pérez-Quiñones, Manuel A., Rodríguez, Nestor (1997) "HCI Education and Research at the University of Puerto Rico-Mayagüez", Conference in Human Factors in Computing Systems CHI'97, Atlanta, GA.

Pérez-Quiñones, Manuel A., and José L. Cruz-Rivera, "Experiences in Conducting Web-based, Paperless Undergraduate Software and Hardware Design Courses," to be presented in Frontiers in Education, Pittsburgh, Nov. 1997.

Pérez-Quiñones, Manuel A. (1996) "Conversational Collaboration in User-Initiated Interruption and Cancellation Requests" Doctoral Dissertation, The George Washington University.

Pérez-Quiñones, M. A., & Sibert, J. L. (1996) "A Collaborative Model of Feedback in Human-Computer Interaction." Proceedings of the Conference in Human Factors in Computing Systems CHI'96, April 14-19, Vancouver, BC. Also available as AIC Technical Report AIC-96-001 (http://www.aic.nrl.navy.mil/papers/1996/m4.html), Navy Center for Applied Research in Artificial Intelligence, Naval Research Laboratory.

Pérez-Quiñones, M. A., & Sibert, J. L. (1996) "Negotiating User-Initiated Cancellation and Interruption Requests." Human Factors in Computing Systems, CHI'96 Conference Proceedings Companion, April 14-19, Vancouver, BC. Also available as AIC Technical Report AIC-96-001 (http://www.aic.nrl.navy.mil/papers/1996/m4.html), Navy Center for Applied Research in Artificial Intelligence, Naval Research Laboratory.

Pérez-Quiñones, M. A. (1995) "Computational Pragmatics in HCI: Using Dialog Context in a Multimodal Application". AIC Technical Report AIC-95-028, Navy Center for Applied Research in Artificial Intelligence, Naval Research Laboratory.

Pérez, Manuel A. (1995) "Conversational Dialogue in Graphical User Interfaces: Interaction Technique Feedback and Dialogue Structure," Human Factors in Computing Systems, CHI '95 Conference Proceedings Companion, May 7-11, 1995, Denver, Colorado.

Pérez, M. A., & Jacob, R. J. K. (1994) "A UIMS Architecture for Focus Processing in a Graphical User Interface." AAAI 1994 Spring Symposium Series: Intelligent Multi-Media Multi-Modal Systems Workshop, Stanford University, California.

Rose, A., Pérez, M. A., & Clements, P. (1994) "The Modechart Toolset User Guide." NRL Technical Memo NRL/MR/5540-94-7427.

Pérez, M. A., & Sibert, J. L. (1993) "Use of Focus In Graphical User Interfaces." Proceedings of International Workshop on Intelligent User Interfaces, Orlando, Florida.

Darken, R., & Pérez, M. A. (1993) "Navigational Techniques for Large Directed Graphs", Technical Report GWU-IIST-93-11. The George Washington University, Washington, D. C.

Pérez, M. A., Ruiz-Camaüer, M., & Feldman, M. B. (1992) "Use of Interesting Events for Separation of User Interface and Application Code in SmallAda", Technical Report GWU-IIST-92-15. The George Washington University, Washington, D. C.

Ballas, J. A., Heitmeyer, C. L., & Pérez, M. A. (1992). Direct Manipulation and Intermittent Automation in Advanced Cockpits. Technical Report 9375. Naval Research Laboratory, Washington, D. C.

Ballas, J. A., Heitmeyer, C. L., & Pérez, M. A. (1992). Evaluating Two Aspects of Direct Manipulation. Proceedings of Conference on Human Factors in Computing Systems, CHI'92, Monterey, California.

Ballas, J. A., Heitmeyer, C. L., & Pérez, M. A. (1991). Interface Styles for Adaptive Automation. Proceedings of the Sixth International Symposium on Aviation Psychology, April 29-May 2, 1991, Columbus, Ohio.

Ballas, J. A., Heitmeyer, C. L., & Pérez, M. A. (1991). Interface styles for the intelligent cockpit: Factors influencing automation deficit. Proceedings of the AIAA Computers in Aerospace 8 Conference. Oct. 22-24, Baltimore, MD.

Feldman, M. B., Vargas-Lopes, A., & Pérez, M. A. (1990) "Small-Ada: Personal Computer Courseware for Studying Concurrent Programming", SIGCSE '90 Proceedings, Washington, DC.

Pérez, M. A., (1987). "A Language for Interactive Computer Graphics Programming", Masters Thesis, Ball State University, Muncie, Indiana.

Student Publications

Avilés, Evelyn, "Remote Collaboration with Direct Manipulation Interaction", Advisor: Manuel A. Pérez Quiñones, CRC'97, Mayagüez, PR.

Presentations

"A Conversational View of Human-Computer Interaction." Western Puerto Rican Linguistic Society, April 2, 1997, Mayagüez, Puerto Rico.

"HCI Education and Research at the University of Puerto Rico-Mayagüez", Organizational Overviews, Conference in Human Factors in Computing Systems CHI'97, March 26, Atlanta, GA.

"A Collaborative Model of Feedback in Human-Computer Interaction." Conference in Human Factors in Computing Systems CHI'96, April 14-19, Vancouver, BC.

"Negotiating User-Initiated Cancellation and Interruption Requests." Conference in Human Factors in Computing Systems, CHI'96, April 14-19, Vancouver, BC.

"Conversational Dialogue in Graphical User Interfaces," Human Factors in Computing Systems CHI'95 Conference Doctoral Consortium, May 7-11, 1995, Denver, Colorado.

"Human-Computer Dialogue in a Graphical User Interface," Computer Science Department Research Seminar Series, United States Naval Academy, Annapolis, Maryland. April 1995.

"The Development of GW-Ada," 13th Annual National Conference on Ada Technology, King of Prussia, Pennsylvania. March 1995.

"Interacción entre el Humano y la Computadora," Colloquium, Departamento de Matemáticas, Recinto de Mayagüez, Universidad de Puerto Rico. December 1992.

"Direct Manipulation for the Intelligent Cockpit," Software Psychology, Washington, D.C. December 1992.

"Direct Manipulation for the Intelligent Cockpit," Graphics and User Interface Group Colloquium, The George Washington University, D. C. Spring 1992.

"MacApp: An Application Framework," Graphics and User Interface Group Colloquium, The George Washington University, D. C. Fall 1989.

"Experimental Design: Direct Manipulation Theory," Graphics and User Interface Group Colloquium, The George Washington University, D. C. Spring 1991.

"Designing User Interfaces with MacApp," Guest Speaker, Human-Computer Interaction Lab, Naval Research Laboratory, D. C. Winter 1989.

"The MacApp Report," Conference Faculty in the Mac World Exposition, Washington, D.C. April 1989.

"Language for Computer Graphics Programming," Computer Science Department Colloquium, Ball State University, Muncie, IN. Spring 1986.

Work Experience

Jul/96 - Present	Assistant Professor, Department of Electrical and Computer Engineering, University of Puerto Rico-Mayagüez. Teaching software courses in the undergraduate Computer Engineering program, and graduate courses in Human-Computer Interaction.
Feb/90 - May/96	Computer Scientist at Naval Research Lab. Currently studying the use of focus and other discourse properties in graphical user interfaces using innovative interaction techniques. Conducted studies studying theory of Direct Manipulation. Co-designer of experiment testing this theory, specifically applied to the design of interfaces for the "Intelligent Cockpit" project. Technical leader in the design and development of graphical editor for the Modechart real-time specification language.
Jan/95 - May/95	Visiting Professor, Computer Science Department, United States Naval Academy, Annapolis, MD. Coordination and teaching of SI304 Programming languages; junior level course for computer science majors (while on leave of absence from NRL)
Sep/93 - Jan/94	Research Assistant at George Washington University. Designed and implemented on the Macintosh a development environment for the Ada programming language. Environment includes Ada-83 compiler/interpreter (originally developed at NYU), editor, library manager, and execution monitor. This development environment is being used at George Washington University as a vehicle for teaching, learning, and experimenting with concurrent programming. GWAda/Ed is available via ftp.
Jan/90 - Jun/90	Porting of Wayne Gretzky game from Atari to the Macintosh for Bethesda Softworks. Port of C and Assembly and design of new user interface for the application.
Nov/89 - Jan/90	Development of full programming environment for SmallAda. Environment includes source code editor with templates, multi-window source level debugger, and interpreter. SmallAda is currently distributed free by The George Washington University as a vehicle for teaching, learning, and experimenting with concurrent programming.
Jan/89 - Nov/89	Software Engineer at Compusearch Software Systems. Designed new user interface for FARA Research and Document Assembly; conversion of FARA from IBM PC to Macintosh. FARA was a procurement automation software package distributed by Compusearch.

Aug/88 - Dec/88	Software Idea Manager at Theme Lines Communications, Inc. Internal software product development, research and analysis of software market to tie into the creation and development of market position for clients. Introduce state-of-the-arts technology into the internal production process.
Feb/88 - Aug/88	Software Engineer at Trace, Inc. Software product design and development for commercial Macintosh applications. Member of the development team for MugMatch, optical database for the law enforcement industry.
Oct/87 - Feb/88	Programmer/Analyst for General Sciences Corporation. Developed applications to generate presentation graphics using PostScript on a LaserWriter.
Aug/85-May/87	Graduate Assistant, Computer Science Department, Ball State University. Teacher assistant for the courses: Data Structures, Seminar in C language, Applications Programming with FORTRAN and Applications Programming with PL/I.
Winter 1985	Developed an assembler with macro capabilities based on the book, "Computer System Architecture" by Morris Mano, for Dr. Ralph Place. Muncie, Indiana, Ball State University.
May/83 - Jul/85	Part-time instructor, Computer Science Department, University of Puerto Rico, Bayamón Campus. Part-time instructor, Computer Science Department, Fundación Ana G. Mendez.
1985	Design software systems and training seminars for several governmental agencies, Puerto Rico.
Summer 1984	Staff member (in charge of computer support for athlete's records and competition results) of the Puerto Rican Delegation to the 1984-Olympic Games in Los Angeles.
Summer 1983	Staff member (in charge of computer support for athlete's records and competition results) of the Puerto Rican Delegation to the 1983 Pan Am Games in Caracas, Venezuela.

Awards, Honors, Fellowships

Minority Fellowship to Workshop "Compiling Scheme", July 1996, Sponsored by National Science Foundation, Indiana University and McGraw-Hill.

Invited to participate in Workshop: CHI 10 Year View, Human Factors in Computing Systems CHI'96, April 14-19, Vancouver, BC.

Minority Fellowship to Workshop "Using Scheme to Understand Programming Languages", June-July 1995, Sponsored by National Science Foundation, Indiana University and McGraw-Hill.

Performance Award May 1994, Department of the Navy, Naval Research Laboratory.

Outstanding Performance Rating and Performance Award May 1993, Department of the Navy, Naval Research Laboratory.

Alan Berman Research Publications 1992 Naval Research Laboratory for Ballas, J. A., Heitmeyer, C. L., & Pérez, M. A. (1992). Direct Manipulation and Intermittent Automation in Advanced Cockpits.

Graduate Fellowship, Departamento Fomento Económico, Estado Libre Asociado de Puerto Rico 1992-1995.

Performance Award May 1991, Department of the Navy, Naval Research Laboratory.

Performance Award May 1990, Department of the Navy, Naval Research Laboratory.

Honors Fellowship, School of Engineering and Applied Sciences, The George Washington University 1987-88.

Vice Chairman Ball State Student Chapter of Association for Computing Machinery 1986-87.

Sigma Zeta Honorary Science Society, 1982, Ball State University.

Golden Key National Honor Society, 1981, Ball State University.

College of Business Dean's Honor List, Winter Quarter 1980, Ball State University.

Personal Data

Member of Association of Computing Machinery (ACM), IEEE Computer Society, Computer Professionals for Social Responsibility (CPSR), Special Interest Group on Computer-Human Interaction (SIGCHI), Special Interest Group on Programming Languages (SIGPLAN), Special Interest Group on Computer Science Education (SIGCSE)

Fluent in Spanish and English, Married, Born May 6, 1962

Vitae - Pedro I. Rivera-Vega

Education:

Ph.D. in Computer Science, December 1990 University of Florida, Gainesville, Fl
Dissertation title: Scheduling Data Redistribution in Distributed Databases
Thesis advisors : Dr. Sham B. Navathe and Dr. Ravi Varadarajan

Master of Arts in Applied Mathematics, June 1980
University of Puerto Rico, Rio Piedras, P.R.

B.S. in Mathematics, August 1977 University of Puerto Rico, Rio Piedras, P.R.

Academic Work Experience:

Assistant Professor (August 1991 - June 1994)

Associate Professor (August 1994 - present)

Department of Mathematics and Computer Science,

University of Puerto Rico, Rio Piedras, P.R.

Teaching undergraduate and graduate courses in the areas of Mathematicsand Computer Science. Doing research in areas of computational mathematics and Computer Science.

Instructor (August 1983 - August 1991) Department of Mathematics, University of Puerto Rico, Cayey, P.R. Taught introductory courses in Mathematics and Computer Sciences. From August 1985 to August 1989 and from January 1990 to August 1990 I was on leave to work for the Ph.D.

Research Assistant (Jan 1986 - May 1987, Aug 1988 - Aug 1989, Jan 1990 - Aug 1990)
Database Research and Development Center, University of Florida
Worked on the design and analysis of *schema integration algorithms for Federated DBS* and in the area of reconfiguration of a Distributed Dababase System,in particular, the problem of how to efficiently achieve a new configuration from an old one.

Research Assistant (Aug 1987 - May 1988)
Medical Systems, College of Medicine, University of Florida
Worked analyzing different data structures and their manipulation for efficiently storing and retrieving information on an on-line PC-based medical library.

Courses Taught:

Graduate: Data Structures and Algorithms I and II.

Undergraduate: Calculus I, Precalculus, Introduction to Computer Science, Assembler Language, Data Structures, Programming Language Concepts, Computer Architecture, and Analysis and Design of Algorithms.

The current semester (Fall 1996) I am teaching the following three courses: Introduction to Computer Science (includes C++ language), Database Systems, and Assembly Language for the IBM-PC.

Computer Programmer and Administrative Experience:

Programmer (Jan 1985 - July 1985)
U.S. Geological Survey, San Juan, Puerto Rico
Developed and implemented algorithms for map applications using FORTRAN 77.

EDP Manager (Jan 1983 - Aug 1983)
Department of Natural Resources, San Juan, Puerto Rico
Director of the Office of Information Systems

Programmer Analyst (Aug 1980 - Jan 1983)
University of Puerto Rico, Humacao, Puerto Rico
Worked on the development and implementation of software for administrative purposes using INFO (a relational database management system) and COBOL programming language.

Research Interests:

- Algorithm design and analysis: Sequential and Parallel
- Routing in computer networks
- Combinatorial optimization
- Distributed and heterogenous databases

List of Publications:

1. (with I. Dejter and A. Rosa) "On the Decomposition of Complete Graphs into Cycles of the Same Length", *Journal of Combinatorial Mathematics and Combinatorial Computing*, Vol. 16 (1994), pp. 129-152.

2. (with Ravi Varadarajan and Shamkant B. Navathe) "Scheduling Data Transfers in Fully Connected Networks," *NETWORKS*, Vol. 22 (1992), pp. 563-588.

3. (with R. Varadarajan) ``An Efficient Algorithm for the File Redistribution Scheduling Problem in Fully Connected Networks," Congressus Numerantium, 1992.

4. (with M.R. Emamy-K and P. Guan) ``On the Characterization of the Maximum Squareless Subgraphs of *5*-cube,"Congressus Numerantium, 1992.

5. (with R. Varadarajan and S.B. Navathe) "Scheduling Data Redistribution in Distributed Databases," Proceedings of the 6th International Conference on Data Engineering, February 1990, pp.166-173.

6. (with R. Varadarajan and S.B. Navathe) "Data Redistribution Scheduling in Fully Connected Networks," Proceedings of the 27th Annual Allerton Conference on Communication, Control, and Computing, September 1989, pp.603-612.

Professional Activities:

Member of the ACM

Other Activities in the Department of Mathematics and Computer Science:

1. Co-PI in the proposal ``Infrastructure for the Ph.D. Program in Computational Mathematics and Computer Science" submitted to NSF and partially approved, 1992.
2. Member of the group evaluating and recommending the networking infrastructure in the building of the Natural Sciences College at UPR, Rio Piedras Campus.
3. Member of the Computer Sciences Comittee in our department: In charge of coordinating the offering of CS courses, courses description, and updating our current BS program in Computer Science.
4. P.I. in the proposal ``Mejoramientos a la Infraestructura para la Investigación en Matemáticas Computacionales." Submitted to Office of External Resources at UPR - Rio Piedras.$19,930.00 approved, 1993.
5. President of the Organizing Committee for SIDIM 95.

Invited Talks:

1. "Efficient data redistribution in fully-connected networks," Department of Mathematics, University of Puerto Rico, Mayagüez, May 2, 1991.
2. ``Problema de Determinar Estrategias de Transferencias de Paquetes en Redes de Comunicacion", Universidad de Puerto Rico, Humacao, P.R. , November, 1994

Speaker in the Following Conferences:

1. *6th International Conference on Data Engineering*, Los Angeles, Ca., February 1990
2. *SIDIM 91*, Universidad Sagrado Corazon, San Juan, P.R., 1991.
3. *SIDIM 92*, Universidad de Puerto Rico, Mayagüez, P.R., 1992.
4. *23rd Southeastern International Conference on Combinatorics, Graph Theory and Computing*, Boca Raton, Fl., February, 1992
5. *SIDIM 94*, Universidad de Puerto Rico, Humacao, P.R., 1994.

RESUME: Domingo Rodríguez

RANK: Professor

EDUCATION

Ph.D. E. E. City University of New York, 1988

EXPERIENCE

Electrical and Computer Engineering Department, University of Puerto Rico
July 1988 to the present

Research Assistant, Center for Large Scale Computation, Graduate Center, CUNY, NY
June 1985 to July 1988

Adjunct Lecturer, New York Institute of Technology, Comp. Science Department, Long Island, New York, September 1984 to June 1985

Senior Systems Engineer, Continental Telephones (CONTEL, Div. Of MCI, Inc.), Jericho, New York, June 1982 to September 1984

Communications Engineer, General Electric Res. and Dev. Center, Schenectady, New York
June 1979 to June 1982

ACADEMIC AND PROFESSIONAL ACTIVITIES

Director - Industrial Affiliates Program (IAP), Elect. and Comp. Engineering Department,
1991 - 1993

Coordinator - Computational Signal Processing Group
July 1, 1996 to the present

Chairman - Computing Research Conference (Annual conference for students)
1994 - 1997

GRANTS (CO-PI Participation)

"Development of a Speech Computer Interface," - Jan. 1994.
Funded by the Science and Technology Board of the Economic Development Administration of Puerto Rico over a three year period ($180,000).

"Development of a Computer Engineering Research Environment at UPR-Mayagüez" - Sept. 1994.
Funded by CISE-NSF over a five year period ($850,000)

"Strengthening the Applied and Computational Mathematics Component" - Sept. 1994.
Funded by RIMI-NSF over a three year period ($400,000)

PUBLICATIONS

R. J. Johnson, J. J. Johnson, D. Rodríguez, R. Tolimieri, “A Methodology for Designing, Modifying, and Implementing Fourier Transform Algorithms on Various Architectures”, Journal of Circuits, Systems, and Signal Processing, Vol. 9, No. 4, Birkhäuser, 1990.

D. Rodríguez, “A New FFT Algorithm and its Implementation of the DSP96000,” IEEE ICASSP '91, Toronto, Canada, 1991.

D. Rodríguez, J. Pertuz, “On Abelian Harmonic Analysis and Artificial Neural Network,” 1991 SPIE Symposium, San Diego, California, 1991.

D. Rodríguez, “Algorithms for Computing the Ambiguity Function on the IBM 3090 Supercomputer,” 1991 International Conference on Industrial and Applied Mathematics, Washington, DC, 1991.

D. Rodríguez, J. Seguel, E. Cruz, “Algebraic Methods for the Analysis and Design of Time-Frequency Signal Processing Algorithms,” IEEE ISCAS '93, Chicago, 1993.

D. Rodríguez, N. G. Santiago, C. Vélez, “Implementation of a New Class of FFT Algorithm on Transputer Computational Structures,” IEEE 36th Midwest Symposium on Circuits and Systems, Detroit, Michigan, August 1993.

D. Rodríguez, J. Seguel, “On the Implementation of Time-Frequency Algorithms for Signal Analysis,” International Symposium on Intelligent Systems In Communications and Power, Puerto Rico, January 1994.

P. Sundaram, D. Rodríguez, S. Santiago, “Deformation Behavior of 70/30 Alpha Brass Plane Stress/Plane Strain,” Scripta Metallurgia at Materialia, Vol. 6, No. 1, 1994.

M. Teixeira, D. Rodríguez, “A New Method Mathematically Links Fast Fourier Transform Fast Cyclic Convolution Algorithms,” IEEE 37th Midwest Symposium on Circuits and Systems, Lafayette, Louisiana, August 1994.

M. Teixeira, D. Rodríguez, “An Educational Environment for the Graphical Manipulation of Signal Processing Algorithms,” 1995 ICSEE Conference, Las Vegas, Nevada, January 1995.

Teixeira, D. Rodríguez, “A Methodology for the Intelligent Implementation of Signal Processing Algorithms,” First World Congress on Intelligent Manufacturing, Processes and Systems, San Juan, Puerto Rico, February 1995.

D. Rodríguez, A. González, P. Sundaram, C. Cassius, "On Fast Algorithms for Stochastic Structural Dynamics Signal Analysis", International Conference on Stochastic Structural Dynamics, San Juan, Jan. 1995.

Rodríguez, A. Rodríguez, N. G. Santiago, “Implementation of Covolutional Codes on Transputer Computational Structures,” 38th IEEE Midwest Symposium on Circuits and Systems, Rio de Janeiro, Brazil, August 1995.

Rodríguez, E. Sánchez, “A Computational Signal Processing Environment Using MATLAB.” NASA University Research Center's Technical Conference on Education, Aeronautics, Space, Autonomy, Earth, and Environment, URC-TC '98, Albuquerque, New Mexico, February 16-19, 1997.

D. Rodríguez, Dilia B. Rueda Serrano, Wilson Vélez, “Filtering Techniques for SAR Imaging Kernel Compuations,” University Research Center's Technical Conference on Education, Aeronautics, Space, Autonomy, Earth, and Environment, URC-TC '98, Huntsville, Alabama, Feb. 22-26, 1998.

Rodríguez, "Fast Computational Cyclic Correlations Using Computational Kronecker Operators," Conference on Information Sciences and Systems, Princeton University, 1998.

D. Rodríguez, “Computational Kronecker Products for Multidimensional SAR Signal Processing Algorithms,” IGARSS 1998.

RESUME: Néstor J. Rodríguez

Fecha de Nacimiento: 6 de diciembre de 1955

Rango Académico: Catedrático

EDUCACION:

BSEE, Universidad de Puerto Rico, 1978
MSEE, Ohio State Universidad, 1981
Ph.D., Universidad de Wisconsin-Madison, 1988

SERVICIO EN UPRM: 17 años

1981 Instructor
1983-1988 Licencia de Estudios
1988 Catedrático Auxiliar
1991 Catedrático Asociado
1996 Catedrático

EXPERIENCIA DE TRABAJO:

Asistente de Cátedra, Departamento de Ingeniería Eléctrica y Computadoras, Universidad de Estado de Wisconsin-Madison, Madison, Wisconsin, septiembre de 1987 a mayo de 1988

Asistente de Investigación, Departamento de Ingeniería Eléctrica y Computadoras, Universidad de Estado de Wisconsin-Madison, Madison, Wisconsin, septiembre de 1986 a mayo de 1987

Ingeniero de Diseño, Phillips Puerto Rico Core, Guayama, Puerto Rico, junio de 1978 a agosto de 1979

CONSULTORIA:

Digital Equipment Corporation, verano de 1991

Storage Tek, octubre de 1990

PUBLICACIONES:

W. Martínez, J. Borges, N. J. Rodríguez, S. Hunt, "A Natural Language Processor with Neural Networks", IEEE International Conference on System, Man and Cybernetics, October 1995.

J. A. Borges, I. Morales and N. J. Rodríguez, "Guidelines for Designing Usable World Wide Web Pages", Conference Companion, Computer-Human Interaction Conference (CHI 96), Vancouver, Canada, April, 1996.

González, M., J. Borges, J. Navarro and N. Rodríquez, "ARSS: An Automatic Resource Scheduling System," Proceedings of the 21st. International Conference on Computers & Industrial Engineering, San Juan, Puerto Rico, March, 1997.

Manuel A. Perez, José A. Borges, and Néstor J. Rodríguez, "HCI Research & Education at UPR Mayagüez", Conference Companion, Proceedings CHI'97, Atlanta, March, 1997.

José A. Borges, Merbil González, José Navarro, Néstor J. Rodríguez, “SAAS: Automatic System for Auto-Supervision in an Emergency Room”, Proceedings of the 10th IEEE Symposium on Computer-Based Medical Systems (CBMS'97), Maribor, Slovenia, June, 1997.

José A. Borges, Israel Morales, Néstor J. Rodríguez, "Page Design Guidelines Developed through Usability Testing", in C. Forsythe, E. Grose & C. J. Ratner, (eds.) Human Factors in Web Development, Lawrence Earlbaum, 1997.

Néstor J. Rodríguez, José A. Borges, Domingo Rodríguez, Emily Angarita, Rafael Muñoz, “A Computer-Based Patient Record for Improving Nursing Care”, Journal of Informatica Medica, June, 1997.

Rodríguez, N. J., Borges J. A. & Morales, I., "Page Design Guidelines for Improving WWW Navigation," 7th. International Conference on Human-Computer Interaction, San Fransico, August, 1997.

GRANTS:

"Supplemental Funding for Development of a Computer Engineering Research Environment at the University of Puerto Rico at Mayagüez", October 31, 1996 NSF CISE II-MI, $30,000.

"Development of a Computer Engineering Research Environment at the University of Puerto Rico at Mayagüez", NSF, $1,506,891, October 1994-September 1999, CoPI.

ORGANIZACIONES PROFESIONALES: IEEE Computer Society

ACTIVIDADES DE DESARROLLO PROFESIONAL RECIENTES:

"Practical Usability Evaluation" CHI '94, Boston, Massachussetts, abril de 1994.

"An Introduction to Virtual Reality", Virtual Reality Annual International Symposium , Research Triangle Park, North Carolina, marzo de 1995.

"Human Factors in Virtual Reality Development", Virtual Reality Annual International Symposium , Research Triangle Park, North Carolina, marzo de 1995,

"User Interface Issues for Virtual Systems", Virtual Reality Annual International Symposium , Research Triangle Park, North Carolina, marzo de 1995,

"Cognitive Factors in Design: Basic Phenomena in Human Memory and Problem Solving", CHI '95, Denver, Colorado, mayo de 1995.

"Intuitive Statistics for HCI Professionals: Developing Understanding and Avoiding Errors", CHI '95, Denver, Colorado, mayo de 1995.

User Interface Desig for the WWW, CHI '96, Vancouver, Canada, abril de 1996.

Design Lessons from the Best of the World Wide Web, CHI '96, Vancouver, Canada, abril de 1996.

Interviewing Customers: Discovering What They Can't Tell You, CHI '96, Vancouver, Canada, abril de 1996.

"Structural Issues in Multimedia Design, CHI '96, Vancouver, Canada, abril de 1996.

"Medical Informatics Seminar", Harvard School of Medicine, Boston, Massachusetts, octubre de 1997.

RESUME: Ramón E. Vásquez Espinosa

Date of Birth: April 9, 1951
Academic Rank: Professor (Full Time)

EDUCATION:

Ph. D. in Electrical Engineering, Louisiana State University, Baton Rouge, La., August 1984

M. S. in Electrical Engineering, University of Puerto Rico, Mayagüez, P.R., May 1979

B. S. in Electrical Engineering, magna Cum Laude, University of Puerto Rico, Mayagüez, P.R., May 1974

UPRM SERVICE: 23 years

1974 Teaching Assistant
1976 Instructor
1979-1984 Study Leave
1984 Assistant Professor
1987 Associate Professor
1992 Professor

EXPERIENCE:

Associate Director, Department of Electrical and Computer Engineering University of Puerto Rico, Mayagüez Campus, March 1990 to present.

Research Assistant, Remote Sensing and Image Processing Center, Department of Electrical and Computer Engineering, Louisiana State University, Baton Rouge, La. July 1980 to June 1984.

Director, Center for Computing Research and Development, Department of Electrical and Computer Engineering, University of Puerto Rico, Mayagüez Campus, 1994 to present.

Director, Laboratory for Applied Remote Sensing and Image Processing, Department of Electrical and Computer Engineering, University of Puerto Rico, Mayagüez Campus, 1989 to present.

CONSULTING:

Digital Equipment Corporation, Sensormatic Electronics, Council on Higher Education International College, Interamerican University, Caribbean University, Member of the Board of Director of the Association of Department of Computer Science and Engineering for Minority Institutions, Washington, D.C., 1992-present

Pier Reviewer for various program at NSF, 1990-present

President of the Review Committee for the MU-SPIN Program, NASA Goddard Space Center, 1992-present

PUBLICATIONS: (last two years)

"A WWW-Base Expert System Advisor for the Diagnostic of Network Communications Problems", A. Morales-Morell, A. Creus, J. Carvajell and R. Vásquez, ADMI'98, Houston, June 1998.

"The ITaLiCS Environment and the Car Component", Ariel V. Mirles and R. Vásquez, ADMI'98, Houston, June 1998.

"Fractal Transform as a Tool for Image Compression", M. Rosado and R. Vásquez, ADMI'98, Houston, June 1998.

"Logical operators as a new tool for texture classification", P. Katiyar and R. Vásquez, Aerosense'98, Orlando, April 1998.

"An Image Retrieval and Processing Expert System for the World Wide Web", R. Rodríguez and R. Vásquez, URC-TC'98, Alabama, Feb. 1998.

"Framework for SAR Image Classification: Comparison of Co-Occurrence Method and Gabor Based Method", Vydia Manian and Ramón Vásquez, Proceeding of the IEEE IGARSS'97, Auguts 1997, Singapore.

"Denoising of LANDSAT Images Using Wavelet Transform", Ramón Vásquez and Farouk Bonilla, 3rd International Airborne Remote Sensing Conference and Exhibition, Copanhagen, Denmark, July, 1997.

"Wavelet Transform and SGLDM: A Classification Performance Study using ML Parameter Estimation, Minimum Distance, and K-nearest neighbor Classifiers", R. Singh R. Vásquez and R. Singh, Aerosense'97, Orlando, FL, May, 1997.

"Comparison of Daubechies, Coiflet, and Symlet for Edge Detection", R. Singh, R. Vásquez and R. Singh, Aerosense'97, Orlando, FL, May, 1997.

"On Scaled and Rotated Texture Segmentation using a Class of Basis Functions", V. Manian and R. Vásquez, Aerosense'97, Orlando, FL, May, 1997.

"Restoration of Simulated NOAA-A VHRR Images by Wavelet Decomposition", F. Bonilla and R. Vásquez, Aerosense'97, Orlando, FL, May, 1997.

"Wavelet Transform and SGLDM: A Classification Performance Study using ML Parameter Estimation, Minimum distance, and K-Nearest neighbor Classifiers", R. Singh and R. Vásquez, Electronic Imaging'97, San Jose, Ca., Feb., 1997.

"A Comparison of Neural Network and Maximum-Likelihood Classifiers for Texture Classification", Electronic Imaging'97, San Jose, Ca., Feb., 1997.

"Classification of Texture Using Fractal Techniques", W. Navas and R. Vásquez, URC-TC'97, Feb., 1997.

"On the Implementation of a Land Cover Classification System for SAR Image Using Khoros", E. Medina and R. Vásquez, URC-TC'97, Feb., 1997.

"A Framework for the Recognition of Scaled, Translated Objects Using the Short Time Fourier Transform, V. Manian and R. Vásquez, 1996 IEEE International Conference on Systems, Man and Cybernetics., Beijing, China, October, 1996.

"On the Implementation of Wavelet Transforms in Multicomputer Networks", International Conference on Signal Processing Applications and Technology, Boston, Ma., October, 1996.

"A Framework for Object Recognition in Images Using the Short Time Fourier Transform", V. Manian and R. Vásquez, SPIE's Optical Science, Engineering and Instrumentation, Denver, CO, August, 1996.

"Comparative Study of Spatial Gray Level Dependence Method and Gabor Transform Method for Texture Analysis". N. Colón and R. Vásquez, ADMI Conference, Mayagüez, P.R., July 1996.

"Crisp and Fuzzy C-Means Algorithms", O. Misla, H. Parsiani, and R. Vásquez, ADMI Conference, Mayagüez, P.R, July 1996.

"Wavelets, Gabor Transform and Co-occurence Matrix: A Comparative Study for Texture Analysis" R. Singh, R. Vásquez and R. Singh, SPIE 10TH Annual International Aerosense Symposium, April 1996.

"Efficient Algorithms for Discrete Gabor Transforms using Multicomputer Networks" V. Manian and R. Vásquez, SPIE 10th Annual International Aerosense Symposium, April 1996.

"A Computational Framework for Analyzing Textured image Classification", IEEE International Conference on System, Man and Cybernetics, R. Vásquez, V. Manian, October 1995.

"An Analysis of Transputer Processor Networks for Image Processing", R. Vásquez, V. Manian, Aerosense '95 (SPIE's International Symposium on Aerosense/Defense Sensing and Dual-Use Photonics '95), April 1995.

"A Methodology for an Automatic Image Updating Systems: Extracting Raster Templates from Vector Data Sets for Template Matching", R. Vásquez, C. Rodríguez, ACSM/ASPRS '95, March 1995.

"An Approach to Develop an Intelligent Interface to Control an Applications Software", R. Vásquez, F. Nevárez, ACSM/ASPRS '95, March 1995.

MEMBERSHIPS: IEEE, ASEE, SPIE, ASPRS, PRS, ACM

HONORS/AWARDS:

TAU BETA PI; ETA KAPPA NU; SIGMA XI; GOLDEN KEY; WHO IS WHO AMONG STUDENTS IN AMERICAN UNIVERSITIES;

Centennial Certificate, The American

Society for Engineering Education; Best of Session Award for the Plenary Session on COASTAL MAPPING AND CHARTING entitled: "An Integrated mapping and Databank System for Coastal Changes"

COURSES TAUGHT AND DEVELOPED:

INEL 4206, INEL 4217, INEL 4278, INEL 6007, INEL 6088, INEL 6048, INEL 6087, INEL 6055, INEL 6080, INEL 6209, INEL 6215, ICOM 5015

PROGRAM DEVELOPMENT PARTICIPATION:

Master in Computer Engineering,
Ph.D in Information and Computing Science and Engineering (in progress)

GRANTS:

"Fingerprint Verification System: A Vectorial Approach", January, 1997 to July, 1998, $228,989.87 with José L. Cruz, Luis Jiménez.

"Supplemental Funding for Development of a Computer Engineering Research Environment at the University of Puerto Rico at Mayagüez", October 31, 1996 NSF CISE II-MI, $30,000

"Center for Computing Research and Development", NSF, $1,506,891, October 1994-September 1999, PI

"INCADEL", Intel, $65,000, February 1996, PI

"MDL", Intel, $172,250, February, 1996, PI

MASTER STUDENTS:

Antonio Crespo, Raúl Brunelli, Enrique E. Enriquez, Carlos Méndez, Manuel A. Jiménez, Miguel Ortíz, Vidya B. Manian, Frances Bermúdez, Félix Nevarez, Wilson Valentín, Benjamín Roa.

Especialidad en Computación Científica

Vitae - Robert Acar

Address:

Department of Mathematics
University of Puerto Rico, Mayagüez
P.O. Box 5000
Mayaguez, PR 00681-5000

Education:

B.S.- Engineering &1973, Université St Joseph, Beirut

DEA Mathématiques &1973, Centre d'Etudes mathématiques, Beirut

Postgraduate Dipl.- Management Science &1975, University of Waterloo, Canada

M.S. - Operations Research &1978, Cornell University

Ph.D. - Computer Science &1987, University of Wisconsin-Madison

Relevant work experience:

Assistant Professor (1996--) at University of Puerto Rico-Mayagüez, Mathematics

Visiting Assistant Professor (1995--96) at University of Nevada-Las Vegas, Mathematics

Visiting Fellow (1994--95) at University of Minnesota, Institute for Mathematics and its Applications

Assistant Professor (1991--94) at Eastern Montana College, Mathematics

Visiting Assistant Professor (1990--91) at UC--Riverside, Mathematics

Visiting Scientist (Fall 1989) at University of Oklahoma, NSF Centre for Analysis and Prediction of Storms

Visiting Assistant Professor (1987--89) at University of Oklahoma, Mathematics

Lecturer (1982, 1984, 1985, 1987) at University of Wisconsin

Courses taught:

Computer Science:
Introduction to Computer Science, Modelling and Simulation, Data Structures and Algorithms,Advanced Programming Languages, Mathematica.

Mathematics:
College Algebra, Precalculus, Finite Mathematics, Contemporary Mathematics, Calculus, Real Analysis, Complex Variable, Linear Algebra, Introduction to Mathematical Probability, Statistical Methods, Engineering Mathematics, Intermediate Partial Differential Equations, Intermediate Ordinary Differential Equations, Deterministic Methods in Operations Research, Optimisation Techniques, Numerical Analysis.

Interests:

Partial differential equations,inverse problems and parameter identification, mathematical modelling,numerical analysis.

Grant:

DOE/EPSCoR Graduate Traineeship in Energy, team project with Montana State, 1993--94.

Contributed talks:

Texas Differential Equations Seminar, Texas A&M, April 88.

ICAM meeting on Numerical PDE's at Virginia Tech, September 88.

AMS meeting in Phoenix, special session on PDEs, January 89.

AMS meeting in San Francisco, special session on PDEs, January 91.

Big Sky analysis miniconference, Eastern Montana College, May 94.

CBMS conference on Nondestructive Evaluation and Inverse Problems, Lexington, June 95.

PACAM V, San Juan, session on Mathematical methods in mechanics, January 97.

Invited talks:

SIAM conference on ``Control in the Nineties'', minisymposium on identification and control of fluid flow, San Francisco, May 89.

Colloquia: Wright State, September 90. University of Central Missouri, April 92. University of Montana, May 92. University of Wyoming, December 93. Iowa State University, May 95.

Organizing and editing:

First and second Big Sky analysis miniconference, Eastern Montana College, May '93 and May'94.

Refereeing:

Journal of Applied Mathematics and Optimization (1996).

Visa status in the U.S. -Permanent resident.

References:

David G. Costa at University of Nevada, Las Vegas at 702-895-0359

Joseph O. Howell at Montana State University--Billings at 406-657-2972

David L. Russell at Virginia Tech at 703-231-6171

William Self at Montana State University--Billings at 406-657-2972

Publications:

A note on optimally dissecting simplices, with M.J.~Todd, Math of OR, **5**, 1 (1980).

Identification of coefficients in elliptic partial differential equations, SIAM J. of Control and Optimization, **31**, 4 (1993).

Analysis of bounded variation penalty methods for linear operator equations\/, (with C.~Vogel), Inverse Problems,**10** (1994).

Symposium proceedings:

Total variation penalty methods for ill-posed problems\/, PACAM V, San Juan 1997.

Report:

The Boussinesq approximation: existence of solutions and validation of some numerical schemes\/, (with L. White), report for the Oklahoma NSF Centre for Analysis and Prediction of Storms (1990).

Work in progress:

1. *Iterative schemes for image restoration based on penalising total variation.*
2. *PDE methods for edge detection*
3. *Surface fitting on array processors\/,* with G.J. Miel and P.D. Turnbough.

Vitae - Oscar Moreno

I. GENERAL INFORMATION:

Name: Oscar Moreno S. S. #: 580-94-6276

College: Natural SciencesDept.: Mathematics

Title: Professor Rank: Professor

Highest Degree: Ph.D., Mathematics, 1974.

University: University of California at Berkeley

Field of Research: Information Theory (Algebraic Coding Theory, Goppa Codes, Algebraic Geometric Goppa Codes, Sequences), Finite Fields (Character Sums, Primitive Roots, Irreducibility of Polynomials), Efficient Computer Searches Using Parallel and Symbolic Computation.

II. PUBLICATIONS

A. Number of Publications in Refereed Journals in the Last 5 Years: 33

B. Selected list of 5 Publications in the Last 3 Years:

1. (with Carlos Moreno) "Exponential Sums and Goppa Codes: II" IEEE IT Trans 38, (1992), 1222-1229.

2. (with Carlos Moreno) "Exponential Sums and Goppa Codes: I" Proceedings of the AMS 111, (1991), 523-531.
3. (with Carlos Moreno) "An Improved Bombieri-Weil Bound and Applications to Coding Theory", Journal of Number Theory, Vol. 42, No. 1 (1992) pp. 32-46.

4. (with V. Zinoviev and D. Zinoviev) "On several new projective curves over F2 of genus 3, 4, and 5". Special issue of the IEEE Transactions on Information Theory devoted to Algebraic Geometric Codes, vol. 41, no. 6, Nov. 1995, 1643--1648.

5. (with H.L. Janwa) "Mc Eliece Public Key Cryptosystems using algebraic-geometric codes" Accepted to Journal of Designs, Codes and Cryptography.

C. Additional 5 Selected Publications:

1. (with P. Vijay Kumar) "Polyphase Sequences with Periodic Correlation Properties better than Binary Sequences". IEEE IT Trans., Vol. 37, No. 3, (May 1991) pp. 603-616.

2. "Futher Results on Quasiperfect Codes Related to the Goppa Codes". (Congressus Numeratium, Vol 40, Dec. 1983, Winnipeg Proceedings of Canada, pp. 249-256 at the 14th S.E. Conference on Combinatorics, Graph Theory and Computing.)

3. "On Primitive Elements of Trace = 1 in GF(2m)", Discrete Mathematics, Vol. 41, No. 1, 1982 (53-56).

4. "Symmetries of Binary Goppa Codes". IEEE Trans. Inform. Theory, Vol. IT-25, No. 5, pp. 609-612, Sep. 1979.

5. (with E. Berlekamp) "Extended Double-Error Correcting Goppa Codes are Cyclic" IEEE Trans. Inform. Theory, 19 (1973) 817-818.

D. Book: (with Carlos Moreno) Report on Exponential Sums has been accepted by AMS.

III. PRESENTATION IN SCIENTIFIC FORUM AND INVITED LECTURES

A. Presentation in National or International Forums During the Last 5 Years:
1. Number of Invited: 13

2. Number of contributed: 22

B. Total Presentations in the last 5 years: 39

C. Invited Lectures in Other Institutions: 9

IV. PROFESSIONAL CONSULTING WORK DIRECTLY RELATED TO RESEARCHERS ACADEMIC ENDEAVOR:

1. Consultant in network and parallel computing at Baruch College Computing Laboratory, CUNY.

2. Network consultant to the Forensic Laboratory of the Commonwealth.

3. Member of Network Consulting Committee to the Chancellor of UPR (Río Piedras Campus).

4. Member of the Advisory Commitee to the DANA Center, of the University of California at Berkeley.

V. SPECIAL DISTINCTIONS

1. Member of the Editorial Board for the Designs, Codes and Cryptography Journal, Kluwer Academic Publisher1.
2. Member of the Editorial Board for the Journal of Finite Fields andApplications (FFA), Academic Press
3. EPSCoR SPA (Scolar Productivity Award) Prize of $5000 each for years 1988, 1989, 1990, 1992, 1993, 1994
4. Visiting Professor: University of California at Berkeley, summer 1990. CUNY, academic year 1990-91.
5. Visiting Professor: University of Tunis (Ecole Superiore des Postes et Des Telecommunications de Tunis) May 1995
6. Member of the International Advisory Commitee of the IEEE International Symposium on Information Theory for the years 1988, 1986, 1985. Organizer of the Geometric Codes section of the Cornell IEEE Workshop in Information Theory.
7. Reviewer for NSF Proposals and referee for several research journals

VI. GRANTS

A. Total amount of grant funds received during the last 5 years: aprox. $4,000,000

B. Grants Approved in the Last 5 Years:

1) "Multi-Media Transmission In Fiber-Optic Networks Using Optical CDMA", DEPSCoR, Office of Naval Reseach, $581,454, 1996.

2) "Infrastructure for Computer Science Research in Puerto Rico:, NSF CISE II, $610,229 1994, Grant No. CDA-9417362

3) "Infrastructure for Computer Science Research in Puerto Rico:, NSF CISE I, $650,000 1992, Grant No. CDA-9215980

4) "EPSCoR Research in Computational Mathematics", Intel Company, $816,200, 1993.

5) "EPSCoR II in the Area of Computational Mathematics and Computer Science", NSF, $828,000, 1991.

6) "Research in Goppa Codes and in Exponential Sums," National Security Agency, $26,572, 1991-1994

7) Subcontract of the Cornell University (Graduate Support in Symbolic and Stochastic Methods) Proposal to the Army Research Office, $130,949, 1993-96.

8) Subcontract of the Cornell University MSI (Mathematical Sciences Institute) Proposal to the Army Research Office, $300,000, 1990-95.

VII. STUDENTS SUPERVISED AND THESIS WORK

A. Number of students whose thesis has been successfully supervised in the last 5 years: 4 M.S., 5 Graduate Non-thesis Research.

B. Number of undergraduate research students supervised during the last 5 years: 11.

C. Post-graduate research associates/fellows: 2 last 3 yrs, now 4.

VIII. COLLABORATIVE RESEARCH PROJECTS WITH OTHER INSTITUTIONS

1. 5 Collaborative projects with the four year colleges of Puerto Rico.
2. With Carlos Moreno of City University of New York (Baruch College) "Character Sums and Coding Theory".
3. With Solomon GHolomb and Herbert Taylor of University of Southern California (CSI Group) "Sonar Sequences".
4. With Vijay Kumar of University of Southern California (CSI Group) "Sequence Design and Character Sums".
7. With Heera lal Janwa of Metha Research Institute of Mathematics and Mathematical Physics at India
8. With Vladimir Leontiev of the Institute for Problems of Information Transmission of Russia
9. Established collaborative agreement between Gauss Research Laboratory and Cornell Mathematical Science Institute.
10. Established collaborative agreement between the Gauss Research Laboratory and the Communication Science Institute of the University of Southern California
11. With Svet Maric of Universty of Cambridge, "Signal Patterns for Locating One or Multiple Targets".

Pablo V. Negrón-Marrero

1. Personal Data

Name: Pablo V. Negrón-Marrero

Address: University of Puerto Rico, Department of Mathematics, Humacao, Puerto Rico 00791

Telephones: Office: (787) 850-9386, Fax: (787) 850-9355

2. Highest Academic Degree

Ph.D., Applied Mathematics, August 1985, University of Maryland, College Park.

3. Professional Experience

Full Professor, July 1996-present, Department of Mathematics, University of Puerto Rico, Humacao.

Full Professor, July 1995-June 1996, Associate Professor, July 1989-June

1995, Assistant Professor, August

1985-June 1989, Department of Mathematics, University of Puerto Rico, Rio Piedras.

Research Associate, August 1987-88, Department of Mathematics, Heriot-Watt University, Edinburgh, Scotland.

4. Most Recent Research Grants Received

Co-PI in "Infrastructure for Computer Science Research in Puerto Rico II", CISE Division of the National Science Foundation, approved for $600,000 (5 years), August 1994.

Co PI in "Infrastructure for Computer Science Research in Puerto Rico", CISE Division of the National Science Foundation, approved for $600,000 (2 years), August 1992.

Creativity Extension Award for "Computation of Bifurcation Diagrams for Nonlinearly Elastic Anisotropic Plates", National Science Foundation, Division of Mathematical Sciences, approved for $80,000 (2 years), August 1991.

"Computation of Bifurcation Diagrams for Nonlinearly Elastic Anisotropic

Plates", National Science Foundation, Division of Mathematical Sciences, approved for $83,500 (3 years), August 1988.

5. Most Recent Research Publications

Negrón-Marrero, P.V., An Algebraic Criterion for Cavitation, Journal of Mathematical Modeling and Scientific Computing, Proceedings of the 10th International Conference on Mathematical Modeling and Computer Modeling and Scientific Computing, Boston, July 1995; X.J.R. Avula and Anil Nerode, Editors, Vol. 6, 1996.

Negrón-Marrero, P.V. and Betancourt, O., The Numerical Computation of Singular Minimizers in Two Dimensional Elasticity, Journal of Computational Physics, Vol. 113, No. 2, pp. 291-303, August 1994.

Negrón-Marrero, P.V. and Betancourt, O., A Pre-Conditioned Spectral Collocation Method for two Dimensional Nonlinear Elasticity, Journal of Mathematical Modeling and Scientific Computing, Proceedings of the 9th International Conference on Mathematical Modeling and Computer Modeling and Scientific Computing, Berkeley, July 1993, X.J.R. Avula, Editor, Vol. 4, 1994.

Negrón-Marrero, P.V. and Santiago-Figueroa, B., Novel Stability Patterns for the Necking of Plates in Tension: A Numerical Study, Applied Numerical Mathematics, Vol. 13, 491-512, 1994.

Vitae - Michael E. O'Sullivan

Mathematics Department
University of Puerto RicoMayaguez, Puerto Rico, 00681sullivan@math.berkeley.edu

Education

Ph.D. Mathematics: University of California at Berkeley,1996.

M.S. Mathematics: Portland State University, 1985.

B.A. Mathematics: Reed College, 1981.

Employment

Assistant Professor of Mathematics: University of Puerto Rico, Mayaguez campus (8/96- present). Teaching courses in pre-calculus, number theory, and geometry to undergraduates. Continuing research on algebraic space curves and on applications of algebraic geometry to error-correcting codes.

Mathematician: O'Sullivan Consulting Incorporated (6/89-6/97). Conduct research on error correcting codes.

Previous Teaching Experience

U.C. Berkeley, Teaching Assistant (F/95, F/92, Sp/89, F/81). Led four one-hour discussion sections per week in a statistics course (F/95) and in calculus courses.

Portland State University, Teaching Assistant (9/84--8/85). Full responsibility for one calculus course each quarter. Prepared assignments and exams.

El Camino College, Instructor (Sp/86). Full responsibility for two introductory algebra courses. Prepared assignments and exams.

Peace Corps, Professor at Lycée de Bossongoa in Central African Republic (1986--1988). Developed the syllabus and taught courses in French to students aged twelve to twenty-six. Subjects ranged from integer arithmetic to algebra, geometry, pre-calculus and calculus.

Awards

National Science Foundation Small Business InnovationsResearch Grant:

Phase I : (2/93-10/93). Developed a computational algorithm and computer simulation for decoding 4-bit per symbol Hermitian codes.

Phase II: (7/94-9/96). Incorporated improvements to the decoding algorithm into the computer simulation, exercised the simulation, oversaw hardware logic design and testing, and investigated commercial applications.

Department of Energy Small Business Cooperative Research and Development Grant (9/94-12/94): Joint work with the Computer Research Group at the Lawrence Livermore National Laboratory on a Sisal language simulation of my decoding algorithm for the 8-bit Hermitian code. The goal was to take advantage of parallel processing for this computationally intensive algorithm.

Articles and Presentations

"The Key Equation for One-Point Codes," presented at *Arithmetic, Geometry and Coding Theory*, Luminy, France, June 1997.

"Decoding of One-Point Codes Using Error Evaluator Polynomials," presented at the *IEEE International Symposium on Information Theory*, Ulm, Germany, July 1997.

"Decoding Hermitian Codes Beyond $(d_{min}- 1) /2$" presented at the *IEEE International Symposium on Information Theory*, Ulm, Germany, July 1997.

"VLSI Architecture for a Decoder for Hermitian Codes" presented at the *IEEE International Symposium on Information Theory*, Ulm, Germany, July 1997.

"Classification and Divisor Class Groups of Normal Cubic Surfaces in $\mathbf{P}^3$" presented to the Eastern Section meeting of the American Mathematical Society, Oct 5, 1996.

"Decoding of Codes Defined by a Single Point on a Curve," *IEEE Transactions on Information Theory*, special issue on algebraic geometry codes, Nov. 1995.

Professional Activities

Memberships: American Mathematical Society; Mathematical Association of America; Institute for Electrical and Electronics Engineers---Information Theory Society.

Conferences Attended:
IEEE International Symposium on Information Theory, in Ulm, Germany, July 1997.

Arithmetic, Geometry and Coding Theory, in Luminy, France,June 1997.

AMS Eastern Section meeting Oct., 1996 in Lawrenceville, NJ.

IEEE International Symposium on Information Theory, in Whistler Canada, Sept., 1995.

AMS Summer Research Institute on Algebraic Geometry, in Santa Cruz, CA, July, 1995.

Joint Mathematics Meetings of the AMS-MAA, in San Francisco, Jan.,1995.

IEEE International Symposium on Information Theory in San Diego, Jan., 1990.

IEEESymposium on Remote Sensing in Vancouver, Canada, Aug., 1989.

Other Skills

Computer: UNIX (including basic system administration), C programming, SISAL (a high level functional language), Macaulay. Foreign Languages: French, Spanish.

Miscellaneous

Citizenship: United States.

Community Service

Developed a program on the arms race using a role play based on the prisoner's dilemma, and presented it to dozens of school classes. Organized and led numerous workshops and meetings in preparation for demonstrations against the arms race and military intervention in Central America. Worked at a cafe serving the skid row area of Portland.

References

Robin Hartshorne, Professor of Mathematics, UC Berkeley.robin@math.berkeley.edu

Dorothy Bollman, Professor of Mathematics, University of Puerto Rico at Mayaguez. bollman@jacobi.upr.clu.edu Hendrik Lenstra, Professor of Mathematics, UC Berkeley. hwl@math.berkeley.edu

Tom Hoholdt, Technical University of Denmark, Lyngby, Denmark
tom@mat.dth.dk

Vitate- Arturo Portnoy

Department of Mathematics
University of Puerto Rico
Mayaguez, PR 00681-9018
office: (787) 832-4040 ext. 3253, home: (787) 805-3078
email: portna@jacobi.upr.clu.edu

EDUCATION

Ph.D. in Mathematics (August 1997), Rensselaer Polytechnic Institute, Troy, New York. GPA: 3.9/4.0. Research area: perturbation theory, inverse problems: recovery of parameters from spectral data. Advisor: Prof. Joyce R. McLaughlin. Thesis title: Stable perturbations of spectral data for rectangular membranes.

M.Sc. in Mathematics (May 1994), Rensselaer Polytechnic Institute, Troy, New York. GPA: 3.8/4.0. Emphasis in differential equations and functional analysis.

B.Sc. in Applied Mathematics (June 1992), Instituto Tecnologico Autonomo de Mexico (ITAM), Mexico City, Mexico. GPA: 3.5/4.0. Strong background in probability, statistics, and operations research.

One Year Program of Sciences (June 1988), The Hebrew University of Jerusalem, Jerusalem, Israel. GPA: 3.4/4.0.

EXPERIENCE

University of Puerto Rico, Mayaguez, Puerto Rico. Assistant Professor of Mathematics. One year renewable position teaching undergraduate courses: precalculus and differential equations (August 1997 to date).

Rensselaer Polytechnic Institute, Troy, New York. Summer research assistant: developed forced oscillations module for the differential equations/mechanical oscillations section of the LINKS project at Rensselaer. LINKS is an effort to provide online, interactive, educational material in the sciences. Instructor for advanced calculus summer course (Summer 1997).

Rensselaer Polytechnic Institute, Troy, New York. Teaching assistant for {\em studio} differential equations. This course relies heavily on computer assisted experimentation by students, using symbolic and numerical computation tools (August 1996 to May 1997).

Rensselaer Polytechnic Institute, Troy, New York. Research assistant. Preparing Ph.D. thesis: Perturbation expansions for a rich set of eigenvalues and eigenfunctions for rectangular membranes subject to a restorative force. Advisor: Joyce R. McLaughlin (May 1995 to August 1996).

Rensselaer Polytechnic Institute, Troy, New York. Teaching assistant for calculus, differential equations, and complex variables. Instructor for linear algebra, differential equations and advanced calculus summer courses (August 1992 to July 1995).

ITAM, Mexico City, Mexico. Teaching assistant: as member of the minor faculty, assisted freshmen with courses in mathematics (June 1990 to June 1992).

Colegio Eton, Mexico City, Mexico. Tutored high school students with special difficulties learning mathematics (November 1989 to November 1990).

SKILLS

Computer: Experience programming in C, PASCAL and BASIC; worked with a variety of spreadsheets, word processors and databases, as well as mathematical and statistical packages such as Maple, MATLAB, LINDO, GAMS, GLIM, TSP. Familiar with UNIX, Windows and Macintosh OS.

Languages: Completely bilingual: English and Spanish.

PUBLICATIONS

Perturbing a rectangular membrane with a restorative force: effects on eigenvalues and eigenfunctions, with Joyce R. McLaughlin, Communications in Partial Differential Equations, Vol. 23, No.'s 1\&2, pp. 243-286.

Perturbation expansions for eigenvalues and eigenvectors for a rectangular membrane subject to a restorative force, with Joyce R. McLaughlin, Electronic Research Announcements of the AMS, 3 (1997), pp. 72-77.

TALKS AND PRESENTATIONS

Natural modes and frequencies for rectangular membranes subject to restorative forces: a perturbation approach. Contributed presentation, XIII SIDIM, University of Puerto Rico, Humacao, PR (February 1998).

Explicit asymptotic formulas for eigenvalues and eigenfunctions for one and two dimensional problems, with Joyce R. McLaughlin. Eigenvalue Problems for Differential Equations Special Session, AMS Central Section Meeting, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin (October 1997).

Stable Perturbations of Spectral Data for Rectangular Membranes. Colloquium presentation, Department of Mathematics, University of Puerto Rico, Mayaguez, PR (October 9th 1997).

Perturbing a rectangular membrane with a restorative force: effects on eigenvalues and eigenfunctions, with Joyce R. McLaughlin. Contributed paper, AMS Southeastern Regional Meeting, University of Tennessee, Chattanooga, TN (October 1996).

REFERENCES

Prof. Robert Acar, Department of Mathematics, University of Puerto Rico, Mayaguez, PR 00681-5000, (787) 832-4040 ext. 3269, acar@jacobi.upr.clu.edu

Prof. M.R.M. Crespo da Silva, Department of Mechanical Engineering, Rensselaer Polytechnic Institute, Troy, NY 12180-3590, (518) 276-2776, crespo@cds1.meche.rpi.edu

Prof. Joyce R. McLaughlin, Department of Mathematical Sciences, Rensselaer Polytechnic Institute, Troy, NY 12180-3590, (518) 276-6349, mclauj@rpi.edu

Prof. Bruce Piper, Department of Mathematical Sciences, Rensselaer Polytechnic Institute, Troy, NY 12180-3590, (518) 276-6892, piperb@rpi.edu

Prof. William Siegmann, Department of Mathematical Sciences, Rensselaer Polytechnic Institute, Troy, NY 12180-3590, (518) 276-6905, siegmw@rpi.edu

Prof. Lev Steinberg, Department of Mathematics, University of Puerto Rico, Mayaguez, PR 00681-5000, (787) 832-4040 ext. 3005, s_lev@rumac.upr.clu.edu

Vitae - Avijit Purkayastha

Address:

Department of Mathematics
University of Puerto Rico, Mayagüez
Mayagüez, PR-00681-5000
(809) 265-3848 (x-3261, x-3297)
avijit@jacobi.upr.clu.edu
URL: http://jacobi.upr.clu.edu/~avijit

Home Address:

College Station
P. O. Box 5005
Mayagüez, PR-00681-5005
(809) 831-4291

Degrees Education:

Ph.D (Mathematical Sciences) May 1993, Northern Illinois University
Advisors: Biswa N. Datta (N.I.U) and Christian Bischof (Argonne Natl. Lab.)Thesis Topic: A Parallel Algorithm for the Sylvster Observer Equation.

B.Sc in Mathematics, Jadavpur University, Calcutta, India.
Graduated with First Class Honours.
Minor in Physics and Chemistry.

Professional Interest

Interested in research in mathematical applications with emphasis on numerical linear algebra, Fast Fourier Transforms on a high performance super-computing platform. Currently working on a parallel matrix equation solver on the intel Paragon using state-of-the-art MPI
(Message Passing Interface Standard) Communication Library, as well as in FFT and applications in Control theory.

Work Experience

Tenured, (since July `97) Associate (since `July `96) Professor, Department of Mathematics, UPR Mayagüez.

Assistant Professor, Department of Mathematics, UPR Mayagüez, August `92 - June `96.

Visiting Rsearcher at the Engineering Research Center, Mississippi State University, May-August 1997.

Systems Administrator for a network of Workstations, X-terminals and a MasPar MP-1, since May `93 - present.

Worked as a Visiting Research Associate at Argonne National Laboratory under Chris Bischof for Dissertation from October '90 to September '92.

Completed an internship as an Applied Mathematician at Allied Signal from May '89 to Dec '89.

Graduate Teaching/Research Assistant and Instructor Northern Illinois University. From Fall '84 to Summer `92.

Career Experience:

Participant in the Cornell Theory Center Virtual Workshop in Parallel Programming with MPI and HPF from Jan 8 -- March 7, 1997.

Selected as a participant for Faculty Enhancement Workshop for Teaching Differential Equations Using a Dynamical Systems Perspective sponsored by NSF and Boston University, hosted by Oberlin College, June 16-19, 1996.

Selected as a participant for the High Performance Scientific-Computing (HPSC) Summer Faculty workshop at the University of Colorado June 7-18 1993.

Was selected for the Summer Institute for Parallel Computations at Argonne National Laboratory, Illinois, Sept 4-14 1990.

Completed a week long workshop on Cray Code Development at The National Centre for Supercomputing Applications at Urbana Champagne Illinois, August 20-24, 1990.

Conference Presentations:

"Inertia of Large Sparse Symmetric Matrices" contributed presentation at the First SIAM Conference on Application of Linear Algebra in Signal, Systems and Control at Boston, August '86.

" Parallel Algorithm for the Multi-input Sylvester-Observer Equation" contributed presentation at the SIAM Conference in Linear Algebra at Minneapolis, September '91.

"A Distributed Algorithm for the Sylvester-Observer Equation", a Minisymposium presentation at the SIAM Conference on Linear Algebra in Signal's, Systems and Control, at Seattle, August `93.

"Efficient Algorithms for some specific FFT's on Massively Parallel Computers", a contributed presentation at the SIAM Conference in Parallel Processing at San Francisco, February '95.

Grants:

[1] "Infrastructure for Computer Science Research in Puerto Rico", (CISE-II, Mathematics) with Oscar Moreno et. al, thru FY `97.

[2] "Improving the Undergraduate Computational Mathematics", with D. Mcgee, F. Santiago and J. Seguel; NSF Grant no. DUE-9552408,thru FY `96.

[3] "Research Initiative for Minority Institution", with P.Tarazaga, J. Seguel, D. Bollman and D. Rodriguez, NSF Grant No. HRD-9450448, thru' FY 96.

[4] "Research Initiative for Minority Institution", with P. Tarazaga, J. Seguel, D. Bollman, NSF Grant No. RII-8905080, thru FY `93.

[5] Seed Money `92-`93, University of Puerto Rico, Mayaguez.

Committees

Member of Computer Consultation Committee (Chairman)

Member of Computer Liason (with Electical Engineering Dept.) Committee

Publications

[1] *A Parallel Algorithm for Sylvester-Observer Equation*, with Chris Bischof and Biswa N. Datta, Preprint ANL/MCS-P274-1191, 1991; SIAM Journal on Scientific Computing, Vol 17-3, pp 686-698; May 1996.

[2] *Efficient Algorithms for some specific FFT\'s on Massively Parallel Computers*, with Jaime Seguel. Proceedings for Seventh SIAM Conference on Parallel Processing for Scientific Computing, pp 21-26, San Francisco, February 1995.

[3] *On a distributed design and implementation for a matrix equation*, with Greg Henry. Accepted for the Eighth SIAM Conference on Parallel Processing for Scientific Computing, Minneapolis, Minnesota; March 14-17, 1997. To be submitted to SIAM Journal for Scientific Computing.

[4] *On a design of a Robust Eigenvalue Assignment Problem* with Chandeni Hetti. Preprint in progress.

[5] *Some Scalability Issues in Parallel Algorithms*, with Xiaobai Sun. Preprint In preparation.

Special and Technical Skills:

Computers : Cray X-MP/Y-MP, Cray C90, Intel iPSC/860, Intel Paragon, Alliant FX/8, IBM SP2, MasPar MP-1, Unix Workstations.

Computer Languages and Operating Systems : Unix, Unicos, Linux, Fortran, HPF, C, C++, Java, VMS, MS-DOS.

Languages: Fluent in English, Bengali, Hindi; Proficiency in Spanish, Limited fluency in French.

Professional Memberships:

Society for Industrial and Applied Mathematics (SIAM)

American Mathematical Society.

References:

Available on request.

Biswa N. Datta, Department of Mathematics
Northern Illinois University, Dekalb, Il-60115
(815)-753-0567, dattab@math.niu.edu

Chris Bischof, MCS Division
Argonne National Laboratory, Argonne, Il-60439
(708)-252-8875, bischof@mcs.anl.gov

Dorothy Bollman, Department of Mathematics
University of Puerto Rico, Mayaguez, PR-00681
(787)-265-3848, bollman@rummat1.upr.clu.edu

Jaime Seguel, Department of Mathematics
University of Puerto Rico, Mayaguez, PR-00681
(787)-265-3848, jseguel@jacobi.upr.clu.edu

Vitae - Wolfgang André Rolke

Address:

P.O. Box 5959 College Station
Mayaguez, PR 00681

Education:

1991 Ph.D. in Applied Mathematics and Statistics, University of Southern California, Los Angeles

1988 M.A. in Pure Mathematics, University of Southern California, Los Angeles

1987 M.A. in Statistics, University of Southern California, Los Angeles

1985 B.A., in Mathematical Economics, University of Ulm, Germany

Work Experience:

Since 1996 Associate Professor of Mathematics and Statistics, University of Puerto Rico - Mayaguez

1992 - 1996 Assistant Professor of Mathematics and Statistics,University of Puerto Rico - Mayaguez

1989 – 1992 Lecturer in Mathematics and Statistics, Santa Monica College, Santa Monica, California

1985 - 1992 Teaching Assistant, University of Southern California, Los Angeles

Publications:

"An Extension to the Normal Probability Plot", submitted to the *American Statistician.*

"Stock Abundance and Potential Yield of the Queen Conch Resource in Belize", with R. Appeldorn, Department of Marine Science, Report to the CARICOM Fisheries Research Assessment and Management Program.

"Underwater Survey of the Queen Conch Resource in Puerto Rico", with R. Appeldorn, Department of Marine Science, in final preparation, 1997

"Testing Nested Models", submitted to the Fermi National Accelerator group E831

"The Bootstrap, Density Estimation and Bump Hunting", submitted to the Fermi National Accelerator group E831

"Teaching Elementary Statistics in the Computer Age", revised and resubmitted to the *American Statistician*

"Continuous-time Markov Processes in Geology", *Journal of Mathematical Geology*, Vol 23, \# 3, April 1991

Presentations:

1997 "Counting the Queen Conch",SIDIM, Universidad de Puerto Rico - Mayaguez.

1997 "Statistical Analysis of the Inner Muon Detector Data", Poster session, EPSCoR Researchers meeting, El Conquistador Resort and Country Club, Fajardo, Puerto Rico.

1996 "Progress Report", Meeting of the DOE-EPSCoR advisory committee, Universidad de Puerto Rico - Rio Piedras.

1996 "Statistics in High Energy Physics", Primer Encuentro Puertorriqueño de Estadisticos, Universidad de Puerto Rico - Rio Piedras.

1996 "The Analysis of Fermi Lab Experiments E687/831", Poster session, EPSCoR Researchers meeting, Ponce Hilton, Puerto Rico.

1996 "Statistical Methods in High Energy Physics", Primer Encuentro Puertorriqueño de Estadisticos, Universidad de Puerto Rico -Rio Piedras

1995 "The Bootstrap, Density Estimation and Bump Hunting", Experiment E831 group meeting, Fermi National Accelerator Laboratory, Batavia, Illinois

1995 "Statistics in High Energy Physics - the Fermi Lab Experiments E687/E831", EPSCoR research in Puerto Rico, Hyatt Cerromar, Dorado, Puerto Rico

1995 "Statistical Methods for Bump Hunting", Department of Energy EPSCoR researchers meeting, Universidad de Puerto Rico - Mayaguez

1995 "Hunting for Charm", SIDIM, Universidad de Puerto Rico - Rio Piedras

1994 "Bump Hunting and Automated Event Selection", Experiment E831 group meeting, Fermi National Accelerator Laboratory, Batavia, Illinois

1994 "A Survey of Robust Estimation Techniques", SIDIM, Universidad de Puerto Rico - Humacao

1993 "A Test for Independence based on Entropy", SIDIM, Interamerican University, San German

Conferences:

1997 "Visualization and Animation in Software, Networks and Databasesplus Visual Programming", Universidad de Puerto Rico - Mayaguez.

1996 DOE-EPSCoR States Meeting, Washington, D.C.

1996 Primer Encuentro Puertorriqueño de Estadisticos,Universidad de Puerto Rico - Rio Piedras, Member of the organizing committee

1996 Hispanic Collaboration for Research and Education in Science and Technology (HiCREST), Mayaguez Hilton, Mayaguez, Puerto Rico

1996 "Topics, Techniques and Technology in the Teaching of Undergraduate Statistics", Framingham State College, Framingham, Boston. Sponsored by the Boston Chapter of the American Statistical Association

1995 "Workshop of the Society for Artificial Intelligence and Statistics", Ford Lauderdale, Florida

1994 "Industry - University: A Winning Partnership", Universidad Interamericana de Puerto Rico, Recinto de Aguadilla

Awards:

1996: Scholarly Productivity Award, EPSCoR Researchers in Puerto Rico, $5000

Grants:

1996 "Charm Decays and High Energy Photoproduction", EPSCoR Grant renewal proposal submitted to the Department of Energy.

1996 "Massive Data Analysis Center", submitted to the Chancellor for consideration as the UPR-RUM entry for a grant to the Air Force Office of Scientific Research under the "Infrastructure Support Program for Historically Black Colleges/ Universities and Minority Institutions", $500,000

1996 "Charm Decays and High Energy Photoproduction", EPSCoR Grant by the Department of Energy, $125,000

1994 "Charm Decays and High Energy Photoproduction", EPSCoR Grant by the Department of Energy, $240.000

Language Proficiency:

Fluent: English, German, Spanish

Conversational: French

Areas of Academic Interest:

Application of statistical methods such as nonparametric density estimation, bootstrap, bump hunting and projection pursuit to high energy physics. General statistical consulting in a wide variety of fields. Improving the teaching of elementary statistics courses through the use of modern technology.

Academic Activities:

Since 1995 Numerous consulting jobs in areas such as marine science, biology, nursing, chemistry and geology in connection with the Statistics Consulting Laboratory at the University of Puerto Rico - Mayaguez

1996: Summer research at the Fermi National Accelerator Laboratory, Batavia, Illinois

1995: Summer research at the Fermi National Accelerator Laboratory, Batavia, Illinois

1994: Summer research at the Fermi National Accelerator Laboratory, Batavia, Illinois

Academic Honors:

1989: Outstanding Academic Achievement Award, University of Southern California, Los Angeles

Administrative Experience:

Since 1996: President of the Graduate Reform Committee, Department of Mathematics, University of Puerto Rico - Mayaguez

1996 Member of the Planning Committee for SIDIM 97

Since 1995: Director of the Statistics Consulting Laboratory, Department of Mathematics, University of Puerto Rico - Mayaguez

Since 1992: Member of the Curriculum Committee, Department of Mathematics, University of Puerto Rico - Mayaguez

Since 1992: Member of the Statistics Committee, University of Puerto Rico - Mayaguez

Chairperson of several graduate student advisory committees

Member of several graduate student advisory committees

Other Activities:

1994: Author of the proposal to create the Statistics Consulting Laboratory, Department of Mathematics, University of Puerto Rico - Mayaguez

1994: Mentor for Academia Sabatina, an effort sponsored by the National Science Foundation to improve high school mathematics

1988: President of the Mathematics Graduate Student Association,University of Southern California, Los Angeles

Legal Status: Resident Alien

Interests:

During my spare time I enjoy sports, particularly golf and tennis, as well as spending time with my wife and my cat.

References:

Dr. Angel Lopez, Department of Physics, University of Puerto Rico - Mayaguez

Dr. Dorothy Bollman, Chair, Department of Mathematics, University of Puerto Rico - Mayaguez

Dr. Pablo Tarazaga, Department of Mathematics, University of Puerto Rico - Mayaguez

Dr. Joseph Watkins, Department of Mathematics, University of Southern California, Los Angeles (Thesis Advisor)

Dr. Peter Baxendale, Department of Mathematics, University of Southern California, Los Angeles:

Vitae - Jaime Seguel

Business Address:

Department of Mathematics
University of Puerto Rico, Mayagüez
Mayagüez, PR-00681-5000

(809) 832-4040 (x-3265, x-3297)

e-mail: jseguel@jacobi.upr.clu.edu

Home Address:

Condominium Alturas de Mayagüez
Apartment 4-D
Mayagüez, PR-00680

Education:

Ph.D (Mathematics) May 1987, City University of New York
Advisor: Prof. Louis Auslander
Thesis Topic: Sparse Matrix Factorizations for Fast Crystallographic FFTs.

M.Sc in Mathematics, September 1981, University of Santiago, Santiago, Chile.
Thesis Topic: Non-archimedian gDF spaces

Professional Interest:

Interested in research in applied and computational harmonic analysis on high performance computing platforms.

Work Experience:

1988- present: Professor, University of Puerto Rico at Mayaguez

1987-1988: Assistant Professor, Notre Dame College of Saint John's University of New York

1984-1985: Graduate Assistant, Hunter College of the City University of New York

1981-1983: Professor, Universidad de Tarapacá, Arica, Chile

1978-1980: Graduate Assistant, Universidad de Santiago de Chile, Chile

Invited Presentations and Short-courses:

“Análisis Armónico Computacional". Invited by Universidad Javeriana de Colombia, Bogotá and COLCIENCIAS

“Análisis Armónico Computacional". Invited by Universidad de Santiago and CONICYT

Grants:

Co-PI in ``Infrastructure for Computer Science Research in Puerto Rico",

(CISE-II, Mathematics) with Oscar Moreno et. al, thru FY `97.

Co-PI in ``Improving the Undergraduate Computational Mathematics", with R. Martinez, F. Santiago and A. Purkayastha; NSF Grant no. DUE-9552408, thru FY `96.

Co-PI in ``Research Initiative for Minority Institution", with P.Tarazaga, A. Purkayastha, D. Bollman and D. Rodriguez, NSF Grant No. HRD-9450448, thru' FY 96.

Co-PI in `` Research Initiative for Minority Institution", with P. Tarazaga, A. Purkayastha, D. Bollman, NSF Grant No. RII-8905080, thru FY `93.

PI in `` Infrastructure for Computer Science Research at UPR Mayaguez" (CISE-II, Mayaguez section), thru FY `97.

Committees:

Member of the Personnel Committee

Member of Graduate Affairs Committee (until 1994)

Chair of the Computational Science and Engineering Ph.D Proposal Committee

Chair of the Research Affairs committee

Member of the Graduate Reform Committe

Member of the Committee of Sciences and Technology (PR-Governor)

Publications:

"Non-Archimedian gDF-spaces and Continuous Functions", Comp. Analysis, Func. Analysis and Approx. Theory, North-Holland, pp 261 - 272, 1986 (with S. Navarro)

"An Efficient Parallel Algorithm for Bit-Reversal". Congressus Numerantium, 79, pp 244-250, 1990 (with D. Bollman and V. Celis)

"Matrix Algebra and Hypercube Parallel Transmissions: IMAC'91, Vol. 2, pp 787-798, 1991 (with J. Barety)

"Addressing Schemes for Prime Factor FFT's and their use in Large-Scale FFT Design". Numerical Methods in Engineering and Applied Sciences, H. Adler, J.C Heinrich, pp 788 - 795, vol 2. Editorial CIMNE, Barcelona, 1992. (with F. Sanmiguel)

"Implementing FFTs in Sisal", Proc. of the Second Sisal User's conference, pp 56 - 62, San Diego 1992. (with D. Bollman and F. Sanmiguel)

"A Sisal Code for Computing the Discrete Fourier Transform on S_n", Proc. of the Second Sisal User's Conference, pp 1 - 7, San Diego, 1992. (with F. Novoa and F. Sanmiguel)

"Algebraic Methods for the Analysis and Design of Time-Frequency Signal Processing Algorithms", IEEE-ISCAS, pp 196 - 199, Vol. 1, 1993 (with D. Rodriguez).

"Even and Quarter-Even prime length symmetric FFTs and their SISAL Implementations". Proc. SISAL'93, Lawrence Livermore National Laboratory, pp 18-24, 1993.

"Fast Digit-Reversal Algorithms on a Shared-Memory Machine", Parallel Computing 20, pp 93-99, 1994. (with D. Bollman)

"Prime Length Symmetric FFTs and Their Computer Implementations" Computer Science 2: Research and Applications, pp 57-65, Plenum Press, 1994.

"On the Implementation of Time-Frequency Algorithms for Chirp Signal Analysis" Proc. IEEE-SISCAP, pp 188-193 (1994). (with D. Rodriguez)

"Mathematical Models Supporting algorithm Design In SIMD Multiprocessing Systems" Proc. IEEE-SISCAP, pp 100-105 (1994). (with J. Barety and H. Figueroa)

"Efficient Algorithms for Some Specific FFTs on a Massively Parallel Computer" Proc. of Seventh SIAM Conference on Parallel Processing for Scientific Computing, pp 21-26 (1995). (with A. Purkhayasta)

"On the Design of a Package for Computing Fast Trigonometric Trnasforms of Variable Size" Proc. of the XIV Int. Conference of the Chilean Comp. Society, pp 89-100, 1994 (with F. Palominos and R. Santander)

"Digit-Index Permutation Algorithms for FFT computations: An Applicative Approach" Proc. High Performance Functional Computing, pp 97-104, Lawrence Livermore N.L. pub. A.P.W. Bohm and J.T. Feo edts., 1995. (with D. Bollman and J. Feo)

"Fast Digit-index Permutations", Scientific Programming, Vol 5, No 2, pp 137 - 146, (1996) (with D. Bollman and J. Feo)

"An Efficient Algorithm for Computing Digit-Reversal Cycles" Congressus Numerantium, Vol 121, pp 117-122, (1996) (with Angel Rivera)

``Parallel Prime Edge-length Multidimensional Symmetric FFTs" Proc. of the Eight SIAM Conference on Parallel Processing for Scientific Computing, in CD ROM, (1997) (with Johanna Ortiz)

Articles Submitted or in Progress:

``Parallel Prime Edge-length Multidimensional Symmetric FFTs" to appear in Advances on Parallel Computing (with Johanna Ortiz)

``A Framework for the Design and Implementation of FFT Permutation Algorithms" (with D. Bollman and J. Feo) to appear in IEEE Trans in Parallel and Distributed Systems.

``A Functional Approach to Radix-r FFTs" (with D. Bollman and J. Feo). To be submitted.

Special and Technical Skills:

Computers : Cray X-MP, Cray Y-MP, Cray 2, Intel Paragon, Alliant FX/8, Sun Workstations, Maspar MP-1.

Computer Languages and Operating Systems : Unix, Fortran, C, C++, Matlab.

Languages: Fluent in English. Knowledge of French.

Professional Memberships:

Society for Industrial and Applied Mathematics (SIAM)

American Mathematical Society (AMS)

Graduate and Undergraduate Research Students:

Veronica Celis

Constanza Sanmiguel

Fernando Novoa

Patricia Hernandez

Harold Figueroa

Angel Rivera

Yuitza Humaran

Johanna Ortiz

Brenda Degró

References

Biswa N. Datta, Department of Mathematics
Northern Illinois University, Dekalb, Il-60115
(815)-753-0567, dattab@math.niu.edu

Chris Bischof, MCS Division Argonne National Laboratory, Argonne, Il-60439
(708)-252-8875, bischof@mcs.anl.gov

Bernard Harris, Department of Mathematics
Northern Illinois University, Dekalb, Il-60115(815)-753-0567, harris@math.niu.edu

Vitae - Lev G. Steinberg

ADDRESS:

Darlington No. 300
Mendez Vigo Street 125
Mayagüez, PR 00680

Tel.: 787/832-4040 ext. 3005, Fax: 787/265-3848

E-mail: S_LEV@RUMAC.UPR.CLU.EDU

EDUCATION:

Ph.D., Institute for Mathematics and Mechanics of Academy of Science, Alma-Ata, U.S.S.R.

MS., Novosibirsk State University, Novosibirsk, U.S.S.R.

EXPERIENCE:

Associate Professor, Department of Mathematics, University of Puerto Rico, Mayagüez Campus; 1996-present.

Assistant Professor, Department of Mathematics, University of Puerto Rico, Mayagüez Campus; 1992-1996 present.

Teaching undergraduate/graduate courses in Calculus, Differential Equations (ODE and PDE), Numerical Analysis, Mathematics of Modern Science. Supervising graduate students. Research involving Inverse Problems in Solid Mechanics.

Senior\ Researcher, Laboratory for Mathematical Modeling and Programming; 1989-1991. Scientific Research Institute at Kishinev, Moldova.

Research and consulting involved Mathematical Models of Control System for Industry.

Senior Researcher and Professor, Research Division and Department of Mathematics and Mechanics, Agriculture Institute at Kishinev, Moldova; 1975-1989.

Taught undergraduate courses on Calculus, Differential Equations,Theoretical Mechanics and Theory of Probability. Supervised undergraduate and graduate students. Research and consulting involved Inverse Problems in Solid Mechanics and Mathematical Modeling.

SELECTED PUBLICATION:

The Linearization of Inverse Spectral Problems for Nonhomogeneous Elastic Bodies Inverse Problems 12, 1996, 483-497.

Inverse Spectral Problems for Thermoelastic Cylinders and Bars, Proceedings of the Second International Conferences on Dynamic System and Application, Atlanta, 517-522.

On Stochastic Stability of Nonlinear Dynamic System. Proceedings of the Third International Conference on Stochastic Structural Dynamic, San Juan, January 15- 18, 1995.

Inverse Spectral Problems For Inhomogeneous Elastic Cylinder. Journal of Elasticity, 38, 1995, 133-151.

Inverse Problems for Oscilation of Elastic Cylinders and Bars,. Proceedings of the First International Conferences on Dynamic System and Application, Atlanta, 1994, 335-242.

PATENTS:

1. *Method of Young and Shear Moduli Definition*. U.S.S.R. \# 1060982, 1.03.82, Co-authors: Dehtiar, L. I. \& Kleiman, A.S.

2. *Method of Dynamical Moduli of Elasticity Definition*. U.S.S.R., \# 1151079, 05.08.83.

3. *Method of Dynamical Moduli of Elasticity Definition*. U.S.S.R., \# 1234753, 26.12.84.

4. *Method of Bar Stress Definition*. U.S.S.R., \#1411583, 11.07.85.

5. *Method of Dynamical Moduli of Elasticity Definition*. U.S.S.R., \# 1412444, 22.04.86.

Vitae - Pablo Tarazaga

Address:

Department of Mathematics
University of Puerto Rico
Mayaguez, Puerto Rico 00681-5000
(787) 832-4040 Ext 3257

e-mail: tarazaga@jacobi.upr.clu.edu

Personal Data:

Birthdate: December 21, 1949.

Birthplace: San Rafael-Mendoza, Argentina.

Immigration Status: Permanent Resident, \# A070426611

Marital Status: Married, two children.

SS - #:460-79-5917

Education:

Doctor in Mathematics (Ph.D.), Universidad Nacional de San Luis, Argentina, 1977.

Licenciado in Mathematics (Master), Universidad Nacional de Cuyo, Argentina, 1971.

Faculty Positions:

1995-	Professor, Department of Mathematics, University of Puerto Rico.
1991	Associate Visiting Professor, Department of Mathematics, University of Kentucky (spring semester).
1990-95	Associate Professor, Department of Mathematics, University of Puerto Rico.
1990	Visiting Professor, Department of Mathematical Science, Rice University (May-August).
1988-90	Visiting Professor in Mathematics, Department of Mathematics, University of Puerto Rico.
1986-88	Research Associate, Department of Mathematical Sciences, Rice University.
1986-88	Fellowship from CONICET, Argentina.
1983-84	Vice-Director of Instituto de Matemática Aplicada de San Luis (IMASL).
1982-94	Member of CONICET (Argentina Research Council) (on leave).
1978-94	Professor in Mathematics, Universidad Nacional de San Luis.
1977-78	Visiting Professor in Mathematics, IMECC Universidad Estadual de Campinas, Brazil.
1977	Associate Professor in Mathematics, Universidad Nacional de San Luis.
1973-76	Assistant Professor in Mathematics, Universidad Nacional de San Luis.
1972-73	Research Associate, Universidad Nacional de Cuyo and Universidad Nacional de San Luis.
1971-72	Research Assistant, Universidad Nacional de Cuyo.

Papers Presented at Meetings:

Fifth ILAS Conference. Atlanta, August 16-19, 1994, Minisymposium Organizer. Distace Matrices, Geometry and Applications.

Fourth ILAS Conference. Rotterdam, The Nederlands, August 15-19, 1994.

Third SIAM Conference on Linear Algebra, Signals, Systems and Control. Seattle, Washington, August 16-19, 1993. Minisymposium Co-organizer.Matrix Completion Problems.

Fourth SIAM Conference on Optimization. Chicago, Illinois, May 11-13, 1992.

Second NIU Conference on Linear Algebra, Numerical Linear Algebra and Applications. Dekalb, Illinois (Northen Illinois University), May 3-5, 1991.

Second SIAM Conference on Linear Algebra, Signals, Systems and Control. San Francisco, California, November 4-8, 1990.

Third SIAM Conference on Optimization, Boston, Massachusetts, April 3-5, 1989.

II Latin American Congress on Operation Research, Buenos Aires, Argentina, August 1984.

II Latin American Congress of Applied Mathematics, Rio de Janeiro, Brazil, December 1983.

International Congress on Mathematical Programming, Rio de Janeiro, Brazil, April 1981.

V Latin American School in Mathematics, Mar del Plata, Argentina,July-August 1980.

Communication at III Symposium Operation Research, University of Mannaheim, Germany, 1978.

Research Support:

1995-97 NSF, CISE, Infrastruture for Computer Science Research in Puerto Rico. Co-Principal Investigtor. Budget \$725,000.00

CISE, Computer Infrastructure for Science and Engineering. It is a National Science Foundation Component that provides funds for computational equipment and research.

1994-97 NSF, RIMI Grant HRD-9450448. "Student Research and the Computational Mathematical Group". Principal Investigator. Budget \$418,501.00

RIMI, Research Improvement in Minority Institutions is an important program of National Science Foundation's focus on enhancing the research and training capacity in science and engineering of Institutions which serve a substantial number of underrepresented minority students.

1992-94 NSF, EPSCoR Grant in Puerto Rico. Computational Mathematics Group. Budget \$828,000.00

EPSCoR is the Experimental Program to Stimulate Competitive Research supported by the National Science Foundation. The goal of this program is to bring academic science and engineering research endeavors in participating States to nationally competitive levels.

1992-94 NSF, CISE, Infrastruture for Computer Science Research in Puerto Rico. Co-Principal Investigtor. Budget \$600,000.00

1989-93 NSF, RIMI Grant RII-8905080 "Strengthening the Applied and Computational Component" Co-Principal Investigator. Budget \$265,122.00

1985-86 CONICET, Argentina. Principal Investigator.

Awards and Recognitions:

1997 Distinguished Professor Award, Department of Mathematics, UPR-M.

1994 Scholarly Productivity Award. EPSCoR-NSF.

1993 Scholarly Productivity Award. EPSCoR-NSF.

1993 Listed in Who's Who Among America's Teachers.

1968 Gold Medal to Best Graduate of School of Mathematics (UNC)

Academic Activities:

1996- Adjunct Professor, Facultad de Ciencias,Universidad Nacional de Colombia.

1996 Visiting Member At Center for Research on Parallel Computation. Rice University, Houston Texas (May).

1995 Visiting Member At Center for Research on Parallel Computation. Rice University, Houston Texas (June-July).

1992 Associate Research at the Computer Center, University of Kentucky, Lexington Kentucky (July-August).

1991 Visiting Member At Center for Research on Parallel Computation. Rice University, Houston Texas (July).

1986 Chairman of Escuela Argentina de Matem\'atica Aplicada, San Luis, Argentina (July-August).

Professional Activities:

1997- Consultant, Bristol Laboratories Corporation, a Bristol-Myers Squibb Company.

1992- Consultant, Abbott Laboratory (Puerto Rico Operation).

1993-94 Member of Board of Education of ASQC, Chapter 1500.

1993-94 Director of CQT Training, ASQC, Chapter 1500.

1990-94 Lecturer in ASQC Courses.

Professional Societies:

Society for Industrial and Applied Mathematics (SIAM).

American Society for Quality Control (ASQC).

International Linear Algebra Society (ILAS).

Unión Matem\'atica Argentina (UMA).

Publications:

[1] The Minimax Theorem for Continuous Games Using an Elimination Procedure. Int. J. of Games Theory, Vol 6, Issue 2: 115-121, 1977 (with E. Marchi).

[2] About (k,n)-Stochastic Matrices. Linear Algebra and its Applications, 26:15-30, 1979 (with E. Marchi).

[3] Some Studies for a General N-Person Game Arising from a Generalization of the von Newmann's Assignment Problem. Journal of Mathematical Analysis and Applications, Vol 74:152-163, 1980 (with E. Marchi).

[4] On a Cooperative Market. Economies et Society, Tomi 14, N 8: 1389-1413, 1980 (with E. Marchi).

[5] A Generalization of von Newmann's Assignment Problem and K. Fan's Optimization Result. Annali di Matematica Pura ed Applicata, (IV), Vol CXXIX: 1-12, 1981 (with E. Marchi).

[6] A Transportation Problem with Competition. Naval Research Logistic Quarterly, Vol 30:573-581,1983 (with E. Marchi).

[7] A Two Steps Interchange Market Model. Revista de la Unión Matemática Argentina, 31:6-16, 1983 (with E. Marchi and E. Saad).

[8] On the Transportation Model with Maximum Capacities. Proceedings of the II Latin American Congress of Applied Mathematics. Rio de Janeiro, Brazil, 1983. Vol II: 579-617, 1983 (with J. Oviedo).

[9] Further Topics in von Newmman's Growth Model. Portugaliae Mathematica, Vol 42, Fas 3: 255-264, 1983-84 (with E. Marchi and E. Elorza).

[10] A New Approach in the Assignment Problem. Proceedings of the II Latin American Congress on Operation Research, Buenos Aires, Argentina, 1984. (With E. Marchi).

[11] Relevant Aspects in Two Person Games. Journal of Optimization Theory and Application, Vol 53:125-131, 1987 (with E. Marchi).

[12] Equilibrium Points for a Wide Class of Games. Collectanea Mathematica, Vol 38 \#3: 195-200, 1988 (with E. Marchi).

[13] Some Computational Aspects of an Input-Output Model.Matematica Aplicada y Computacional, Vol 8 \# 1: 83-92 (1989) (with A. Neme and J. Cesco).

[14] Extremality of Stochastic Matrices in Non-Usual Cones. Journal of Optimization Theory and Applications Vol 66 \# 1:47-59 (1990) (with E. Marchi and A. Neme).

[15] Eigenvalue Estimates for Symmetric Matrices. Linear Algebra and its Applications, 135:171-179 (1990).

[16] The Cone of Distance Matrices. Linear Algebra and its Applications 144:153-169 (1991) (with T. Hayden, J. Wells and Wei-Min Liu).

[17] More Estimates for Eigenvalues and Singular Values. Linear Algebra and its Applications, 149:97-110 (1991).

[18] The Real Positive Definite Completion Problem for a Simple Cycle. Linear Algebra and its Applications 192:3-31 (1993) (with W. Barrett and C.R. Johnson).

[19] Distance Matrices and Regular Figures. Linear Algebra and its Applications 195:9-16 (1993) (with T. Hayden).

[20] An Optimization Problem on Subsets of Symmetric Positive Semidefinite Matrices. Journal of Optimization Theory and Applications 79(3):513-524 (1993) (with M. Trosset).

[21] Bounds for Singular Values Using Traces. Linear Algebra and its Applications 210:227-254 (1994) (with J.K. Merikoski and H. Sarria).

[22] Connections Between the Positive Semidefinite and Distance Matrix Completion Problems. Linear Algebra and its Applications 223/224:375-391 (1995) (with C.R. Johnson).

[23] Circum-Euclidean Distance Matrices and Faces, Linear Algebra and its Applications 232:77-96 (1996) (with T. Hayden and J. Wells).

[24] Block Matrices and Multispherical Structure of Distace Matrices. Linear Algebra and its Applications 247:203:216 (1996).(with T. Hayden,J. Lee and J. Wells).

[25] About Input-Output Correspondence in a N-Steps Transformation Model. To appear in Revista de Informática e Investigación Operativa

[26] Maximal Determinant Completions. Submitted to Linear Algebra and its Applications.(with W. Glunt, T. Hayden and C.R. Johnson).

[27] Approximate Semidefinite Matrices in a Linear Variety. Submitted to SIAM Journal of matrix Analysis and Applications. (with Charles Johnson).

[28] Some Properties of Euclidean Distance Matrices and Elliptic Matrices. Submitted to Linear Algebra and its Applications.(with Juan E. Gallardo)

In Preparation:

[1] Computing the Nearest Diagonally Dominant Matrix (with Maria mendoza and Marcos Raydan.

[2] Binary Representation of Normalized Symmetric and Correlation Matrices (with Charles Johnson).

[3] Circulant Euclidean Distance Matrices: structure, completions and applications (with W. Rivera and E. Vélez).

Papers:

[1] Estudio Sobre las Extremales de Cierto Tipo de K-Matrices. Doctoral Dissertation, 1977.

[2] About Certain Equivalent Linear Problems. Preprint.

[3] About Extremal of Certain Convex Set. Preprint.

[4] Constrainted Transportation Problem. Preprint.

[5] On Cycles and Simple Cycles of Doubly Stochastic Matrices Convex Set. Preprint (with J. Oviedo).

[6] About the Structure of a Polytope. Preprint.

Ph.D. Students:

1986 Jorge Oviedo, Universidad Nacional de San Luis, Argentina.

Master Students:

1987 Ana María Suarez, Universidad Nacional de San Luis, Argentina.

1993 Humberto Sarria, University of Puerto Rico at Mayaguez, Puerto Rico

1994 Wilson Rivera, University of Puerto Rico at Mayaguez, Puerto Rico

1994 Esperanza Vélez, University of Puerto Rico at Mayaguez,Puerto Rico

1995 Juan Enrique Gallardo, Universityof Puerto Rico at Mayaguez,Puerto Rico

Students Under Supervision:

Graduate: Lida Uribe

Undergraduate: Merida Ellis and Liliana Torres.

Current Research:

During the academic years 86-88, I was working in Optimization in the Mathematical Science Department of Rice University under the direction of Professor John E. Dennis. After that through a NSF grant I have spent time in differet summers in that Department working in areas of common interest with Professors John Dennis and Richard Tapia.

My work in Optimization started around the problem of minimizing a quadratic convex function over the set of symmetric positive semidefinite matrices with rank less than or equal to k. This is an optimization problem related to the problem of finding the nearest distance matrix with fix embeding rank to a given predistance matrix.

A first approach was to transform the problem into an unconstrained problem, this allows us to use standard software to obtain local minimizers, but this is clearly not enough. More research about the structure of the problem and specially the constraint sets is needed. Also more numerical experimentation has to be done in this area.

Working on the cone of symmetric positive semidefinite matrices, an interesting property came up, and allowed me to get interesting bounds for eigenvalues of symmetric matrices as well as related these bounds to the geometry of the cone. Lately we also obtained estimates for singular values using similar techniques.

Because the important relation between the optimization problems and the structure of the cones of positive semidefinite matrices and the distance matrices we have been lately studying their structure. All this area is strongly connected with applications, in particular with the multidimensional scaling problem in statistics and the molecule conformation problem using the approach of distance geometry. This molecule conformation problem is a high priority in molecular biology, moreover structural biology and pharmaceutical design have been listed as two of the "Grand Challenges" in high performance computing by the U.S. Research and Development Program.

An important related area is completion problems, I am interested in this area too and some results have been obtained. On the other hand distance matrices completion are under study at the present.

In the future, I would like to continue in this area as well as study more about the algorithms for the optimization problems. I am interested too in any related problem. Most of results obtained in these areas are in the papers:

[1] Eigenvalue Estimates for Symmetric Matrices.

[2] An Optimization Problem on Subsets of Positive Semidefinite Matrices.

[3] More Estimates for Eigenvalues and Singular Values.

[4] The Cone of Distance Matrices.

[5] Distance Matrices and Regular Figures.

[6] Structural Bounds for Eigenvalues Perturbation.

[7] The Real Positive Definite Problem for a Simple Cycle.

[8] Maximal Determinant Completion.

[9] Circum-Euclidean Distance Matrices and Faces.

[10] Bounds for Singular Values Using Traces.

[11] Block Matrices and Multispherical Structure of Distance Matrices.

[12] Maximal Determinant Completions.

[13] Approximate Semidefinite Matrices in a Linear Variety.

[14] Some Properties of Euclidean Distance Matrices and Elliptic Matrices.

Viate - Dr. Miguel Vélez-Reyes, P.E.

Associate Professor

Education:

Ph.D.	Massachusetts Institute of Technology, September 1992
Electrical Engineer	Massachusetts Institute of Technology, June 1988
S.M.E.E.	Massachusetts Institute of Technology, June 1988
B.S.E.E.	University of Puerto Rico Mayagüez Campus, June 1985

Experience:

Department of Electrical and Computer Engineering,
University of Puerto Rico Mayagüez Campus, Mayagüez, P.R.
Associate Professor July 1995-present
Assistant Professor July 1992-June 1995

Teaching and research in Electrical Engineering. Currently involved in research and teaching graduate and undergraduate courses in estimation, remote sensing, and control systems.

NASA Goddard Space Flight Center, Greenbelt, MD. Summer 1997. Research in remote sensing data assimilation and information content in high spectral resolution radiometers. Sponsored by NASA-ASEE Summer Faculty Fellowship Program.

United States Air Force Phillips Laboratory, Hanscom Air Force Base, Boston, MA, Summer 1996. Research in algorithms for atmospheric retrieval problems from microwave radiometry using regularization methods.

Consulting Experience:

Curriculum and Facilities Assessment of the Informatics, and the Technology and Engineering Schools at Universidad Accion Pro Educación y Cultura (UNAPEC), Santo Domingo, Dominican Republic, October 12-16, 1994.

Journal Publications:

M. Vélez-Reyes and G.C. Verghese, "Decomposed Algorithms for Improved Convergence in Parameter Estimation." Submitted to **SIAM Journal on Scientific Computing**.

M. Burth, G.C. Verghese, and M. Vélez-Reyes, "Subset Selection for Improved Parameter Estimation in On-Line Identification of a Synchronous Generator." Submitted to **IEEE Transactions on Power Systems**.

B. Argüello-Serrano and M. Vélez-Reyes, "Nonlinear Control of a Heating, Ventilating, and Air Conditioning System with Thermal Load Estimation." To appear in **IEEE Transactions on Control Technology**.

M. Vélez-Reyes, "Decomposed Algorithms for Parameter Estimation." In **Zeitschrift für Angewandte Mathematik und Mechanik**. ICIAM/GAMM'95 Issue 3: Applied Stochastics and Optimization, O. Mahrenholtz, K. Marti, and R. Mennicken, eds., Akademie-Verlag, Berlin, pp. 577-578, 1996.

M. Vélez-Reyes, "A Nonlinear Subset Selection Method for Dynamic System Identification." In **Zeitschrift für Angewandte Mathematik und Mechanik**. ICIAM/GAMM'95 Issue 3: Applied Stochastics and Optimization, O. Mahrenholtz, K. Marti, and R. Mennicken, eds., Akademie-Verlag, Berlin, p575-576, 1996.

M. Vélez-Reyes and G.C. Verghese, "Decomposed Algorithms for Speed and Parameter Estimation for Induction Machines". In **Nonlinear Control Systems Design 1992**, Selected papers from the 2nd IFAC Symp., Bordeaux, France, 24-26 June 1992, Edited by M. Fliess, IFAC Symposium Series No. 7, Pergamon Press, 1993.

Publications in Conference Proceedings:

C. Rentel and M. Vélez-Reyes "Nonlinear Decoupling of Temperature and Relative Humidity for an Air Conditioning System." Submitted to IEEE Conference on Decision and Control, December 16-18, Tampa FL, 1998.

M. Vélez-Reyes, “Atmospheric Retrievals using Regularization Methods.” To appear in Proceedings of the 1998 IEEE International Geosciences and Remote Sensing Symposium, July 6-10, Seattle, WA, 1998.

M. Vélez-Reyes and L. O. Jiménez, “Subset Selection Analysis for the Reduction of Hyperspectral Imagery.” To appear in Proceedings of the 1998 IEEE International Geosciences and Remote Sensing Symposium, July 6-10, Seattle, WA, 1998.

M. Vélez-Reyes and J. Joiner, “Analysis of Information Content in High Resolution Sounders using Subset Selection Methods.” To appear in Proceedings of the 1998 NASA URC Technical Conference on Aeronautics, Space Science and Technology, Earth System Sciences, Global Hydrology, and Education. To be held in Huntsville AL during February 22-26, 1998.

J.M. Ortíz-Rodríguez and M. Vélez-Reyes, “A MATLAB GUI Environment to Aid in the Detection of Oceanic Features Present in AVHRR Thermal Imagery.” To appear in Proceedings of the 1998 NASA URC Technical Conference on Aeronautics, Space Science and Technology, Earth System Sciences, Global Hydrology, and Education. To be held in Huntsville AL during February 22-26, 1998.

F. Pagán, G. Fernández, M. Vélez-Reyes, and L. O. Jiménez, “Dimension Reduction in AVIRIS and LANDSAT Images using Subset Selection Methods.” To appear in Proceedings of the 1998 NASA URC Technical Conference on Aeronautics, Space Science and Technology, Earth System Sciences, Global Hydrology, and Education. To be held in Huntsville AL during February 22-26, 1998.

R. Castro-Anaya and M. Vélez-Reyes, “Speed Sensorless Control of Induction Motors using Decomposed Algorithms.” Submitted to 2nd IMACS International Multiconference: CESA'98 Computational Engineering in Systems Applications. To be held in Hammamet Tunisia during April 1-4, 1998.

M. Vélez-Reyes, L. O. Jiménez, F. Pagán, and G. Fernández, “Subset Selection for the Analysis of Hyperspectral Data.” To appear in Proceedings of the 1997 International Symposium on Spectral Sensing. Held in San Diego CA during December 13 to 19, 1997.

J.M. Ortíz-Rodríguez and M. Vélez-Reyes, "The use of edge-enhancing smoothing pre-filters to aid in the detection of oceanographic features." In Proceedings of ADMI ‘97: The Symposium on Computing at Minority Institutions, Washington DC, 29 May to 1 June 1997.

J.M. Ortíz-Rodríguez and M. Vélez-Reyes, "Pre-processing of AVHRR Thermal Imagery to Improve the Detection of Oceanographic Features." In Proceedings of the 1997 Computing Research Conference (CRC’97). Held in Mayagüez, P.R. during April 18, 1997.

F. González and M.Vélez-Reyes, "Simulation of Satellite Imagery using Modtran 3.5." In Proceedings of the 1997 Computing Research Conference (CRC’97). Held in Mayagüez, P.R. during April 18, 1997.

M. Vélez-Reyes and G.C. Verghese, “Parameter Estimation using Decomposed Algorithms with Fast Convergence Rates.” To appear in Proceedings of the 21st International Conference on Computers & Industrial Engineering. Held in San Juan, P.R. during March 10-12, 1997.

M. Vélez-Reyes and R. Galarza-Galarza, “Regularization of Atmospheric Temperature Retrieval Problems.” In M. Jamshidi, et.al. editors, NASA University Research Centers Technical Advances in Education, Aeronautics, Space, Autonomy, Earth and Environment, NASA ACE Center Series, Vol. 1, 1997.

F.O. Gonzalez and M.Vélez-Reyes, “Atmospheric Correction of Satellite Imagery using Modtran 3.5 Code.” In M. Jamshidi, et.al. editors, NASA University Research Centers Technical Advances in Education, Aeronautics, Space, Autonomy, Earth and Environment, NASA ACE Center Series, Vol. 1, 1997.

J. Tafur-Sotelo and M. Vélez-Reyes, “Adaptive Feedback Linearizing Controller for a Shunt DC Motor.” In Proceedings of “Simposio IEEE Mexico”, Vol. 2, pp. 53-59, Monterrey, Mexico, October 23-25, 1996.

M. Vélez-Reyes and G.C. Verghese, “Subset Selection in Identification, and Application to Speed and Parameter Estimation for Induction Machines”, In Proceedings of the 4th IEEE Conference on Control Applications, Albany NY, September 28-29, 1995.

B. Argüello and M. Vélez-Reyes, “Nonlinear Control of a HVAC System with Thermal Load Estimation.” In Proceedings of the 4th IEEE Conference on Control Applications, Albany NY, September 28-29, 1995.

G. Beauchamp and M. Vélez-Reyes, “A Process Instrumentation and Control Laboratory”, In Proceedings of the 1995 ASEE Annual Conference, Vol. 1, pp. 675-679, Anaheim, CA, June 1995.

M. Vélez-Reyes and G.C. Verghese, "Robust Decomposed Algorithms for Speed and Parameter Estimation for Induction Machines". In Proceedings of the IMACS-TC1 4th International Conference on Computational Aspects of Electromechanical Energy Converters, Montreal, Canada, July 1993.

Technical Reports:

M. Vélez-Reyes, Regularization of Linear and Nonlinear Retrieval Problems in Atmospheric Remote Sensing. Submitted to Phillips Laboratory and Air Force Office of Scientific Research, August 1996.

M. Vélez-Reyes, A. Khan, and D. Serrano, Intelligent Energy Management Systems for Commercial and Industrial Buildings. May 1995.

Awarded Grants:

PI in Parameter Estimation for Ill-Conditioned Systems with Application to Electric Drives and Power Systems. Presidential Early Career Award for Scientists and Engineers (PECASE). 1 June 1997 to 31 May de 2002. Amount: from NSF $500,000, UPR Matching $155,000.

PI in CAREER: Parameter Estimation for Ill-Conditioned Systems with Application to Electric Drives and Power Systems. NSF CAREER Program. 1 June 1997 to 31 May de 2001. Amount: from NSF $200,000, UPR Matching $155,000. (Substituted by PECASE Award)

Co-PI in Unsupervised Classification System for Hyperspectral Data Analysis (Dr. Luis Jiménez, PI). Submitted to DEPSCoR. $330,000 October 1997 to September 2000.

Co-PI in Clustering and Subset Selection Research for Hyperspectral Data Analysis (Dr. Luis Jiménez, PI). Submitted to ARMY Corp of Engineers Topographic Engineering Center. $314,862 October 1997 to September 2000.

Co-PI in Integrated Atmospheric Water Estimation using Global Positioning System (GPS) Sounding and Satellite Water Vapor Retrieval Algorithms in the grant Tropical Atmospheric Science Center. (Dr. Glen Mattioli, PI) NASA EPSCoR June 1 1997 to May 31, 1999. Amount for the component: $160,000. Total grant amount $2M ($1M NASA, and $1M UPR).

Co-PI in Redesign of the Timing Output T1 Assembly: Conversion to Surface Mount Technology, (Dr. Agustin Rullan, PI) Telecom Solutions, Puerto Rico, Inc. $56,702.60, April-December 1997.

PI in Development of Algorithms for Linear and Nonlinear Retrieval Problems in Atmospheric Remote Sensing using Regularization Methods. Air Force Office of Scientific Research Summer Research Extension Program. February 1 to March 1998. Amount: $25,000. Matching from UPRM $14,386.

PI for the Advanced Automated Image Analysis Project in the grant Tropical Center for Earth and Space Studies, with Prof. Rafael Fernández-Seín (Project director), NASA University Research Centers Program, $6.5M, July 1995 to June 2000.

Courses Taught:

Estimation, Detection, and Stochastic Processes (Created). Fundamentals of detection, estimation, and random process theory for signal processing, communications, and control. Random processes and sequences. Linear systems driven by random processes. Bayesian and nonrandom parameter estimation. Signal detection and estimation from waveform observations. Wiener and Kalman filters.

Introduction to Nonlinear Control Systems (Revised): Analysis and synthesis of nonlinear control systems; phase and describing function techniques; Lyapunov's first and second methods and its applications in the design and stability determination of nonlinear systems; introduction to several nonlinear control methodologies.

Automation and Robotics (Revised): Analysis and design of automated pneumatic systems using programmable controllers. Programming of industrial robots.

Introduction to Remote Sensing: History, principles, and applications of remote sensing. Electromagnetic radiation; aerial photography; image interpretation; land observation satellite systems; image resolution; preprocessing and classification of images; geographic information systems.

Adaptive Systems in Control and Signal Processing (Special Topics): Introductory course to adaptive systems in control and signal processing. Basic architectures. Parameter estimation algorithms. Adaptive algorithms for control using direct and indirect schemes. Adaptive algorithms for filtering, smoothing, and prediction. Emphasis in applications.

Introduction to Control Systems: Analysis of control system and their mathematical modeling; analysis and design of control systems for single-input single-output plants.

Electrical Systems Analysis I: Analysis of direct current and alternating current linear electric circuits; laws and concepts that characterize their behavior.

Fundamentals of Electrical Engineering: Laws and fundamental concepts that govern the behavior of electric and magnetic circuits; ideal models for resistors, voltage and current sources, capacitors and inductors; three-phase circuits and transformers.

Graduate Theses Supervised:

Fabian González, Algorithms for Atmospheric Retrievals using Regularization Methods, Master Thesis in progress.

Jose M. Ortiz, Detection of Oceanic Features in Thermal Imagery, Master Thesis in progress.

Edgardo Desardén, Control of a Centrifuge Machine, Master of Engineering Project in progress.

Luis Ortiz, Design of a Graphic User Interface for Robot Programming, Master Thesis in progress.

Wee Liam Fung Ng, Speed Sensorless Control of a AC Permanent Magnet Motor, Master Thesis in progress.

Rogelio Castro, Adaptive Speed Control of an Induction Motor without a Speed Sensor, Master Thesis, May 1997.

Carlos Rentel, Nonlinear Decoupling of Temperature and Relative Humidity for a Heating Ventilating and Air Conditioning System, Master Thesis, December 1996.

Elvyn Rodríguez, Decoupled Control of a Separately Excited DC Motor, Master Thesis, May 1996.

Julio Tafur, Adaptive Output Feedback Linearizing Speed Control of a Shunt DC Motor, Master Thesis, December 1995.

Betzaida Argüello, Nonlinear Control of a HVAC System with Thermal Load Estimation, Master Thesis, December 1994.

Samuel X. Seguí, Adaptive Speed Control of a DC Motor without Rotational Transducers, Master Thesis, May 1994.

Undergraduate Students Supervised:

Francisco Pagán, Subset Selection Analysis of AVIRIS Imagery, January 1997-Current.

Gianna Fernández, Subset Selection Analysis of LANDSAT Imagery, January-May, 1997.

Rachel Vélez, Development of a Web Page for TCESS Advanced Automated Image Analysis Project, January-May, 1997.

Ruben E. Galarza-Galarza, Atmospheric Temperature Retrievals from Microwave Radiometry, August-December 1996.

Juan Laguer-Díaz, Atmospheric Correction of Satellite Imagery, August-December 1996.

Ruben E. Galarza-Galarza, Edge Detection in Ocean Imagery. January-May 1996.

Gricelis Zayas-Cedeño and Mitchelle Cintrón-Torres, Algorithms for Signal and Image Reconstruction. August 1995-May 1996.

Juan Laguer-Díaz, Signal Processing Applications in Flood Forecasting. August 1995-May 1996.

José D. Fernández, Orlando M. Cáceres, and Adnorin L. Méndez, Design and Implementation of a Graphic User Interface for Programming and Control of Robots. January-May 1996.

Ismael García-Rios, Speed Control of a DC Motor without a Speed Sensor. August 1994-May 1995.

José A. Valentín, Data Acquisition System for Flash Flood Forecasting, August 1994-May 1995.

Faculty Committees:

Director, ECE Industrial Affiliates Program. 1993-present. As president of the Industrial Affiliates Program, I have been able to coordinate the efforts to collect around $30,000 per year to support undergraduate research projects in our department and since last year in the entire Engineering Faculty. The funding for 97-98 academic year is $49,000

President, Engineering Faculty Library Committee. October 1996-December 1997.

President, Engineering Research Committee. October 1994 to October 1996.

Member, ECE Control Systems Area Committee. 1992-present.

Member, ECE Power Systems Area Committee, 1992-present.

Member, ECE Graduate Committee, 1993-present.

Researcher, Center for Computing Research and Development (CECORD).

Coordinator, Image and Signal Analysis Group, LARSIP.

Honors and Awards:

Presidential Early Career Award for Scientists and Engineers for "Contributions to engineering education and research on power systems applicable to large systems that transfer power among multiple suppliers in the electric power industry." The presidential honor is the highest bestowed by the U.S. government on outstanding young scientists and engineers who are in the early stages of their independent research careers. Given in November 3, 1997.

NASA Summer Faculty Fellowship, June to August 1997.

Honorary memberships in:

Sigma XI Honor Society

Tau Beta Pi Honor Society

Phi Kappa Phi Honor Society

Professional Memberships and Affiliations:

Licensed Engineer in Puerto Rico since 1996

Colegio de Ingenieros y Agrimensores de Puerto Rico

Sociedad de Ingenieros Electricistas de Puerto Rico

Institute for Electrical and Electronics Engineers (IEEE)

President IEEE Puerto Rico Western Chapter since April 1996

International Federation for Automatic Control (IFAC)

American Society for Engineering Education

American Society of Photogammetry and Remote Sensing (ASPRS)

American Meteorological Society