# Curriculum Vitae
## Nayda G. Santiago, Ph.D.

Contact: naydag.santiago@upr.edu

## Degrees

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|---|---|---|---|
| Ph.D. | Electrical Engineering | Michigan State University, East Lansing, MI, USA | 2003 |
| M.Eng. | Electrical Engineering | Cornell University, Ithaca, NY, USA | 1990 |
| B.S. | Electrical Engineering | University of Puerto Rico, Mayaguez Campus, Mayaguez, PR, USA | 1989 |

## Appointments

**Jul 2015 to Present**: **Professor**, Electrical and Computer Engineering Department, University of Puerto Rico, Mayaguez Campus

June 2022 – Visiting Educator, Microsoft Corp., Seattle, Washington, USA

Jun 2018 to Jul 2018 – Faculty in Residence, Google LLC, Mountain View, California, USA

Jul 2008-Jun 2015: Associate Professor, Electrical and Computer Engineering Department, University of Puerto Rico, Mayaguez Campus.

Sept 2003-Jun 2008: Assistant Professor, Electrical and Computer Engineering Department, University of Puerto Rico, Mayaguez Campus.

Aug 2000- Aug 2003: Instructor, Electrical and Computer Engineering Department, University of Puerto Rico, Mayaguez Campus.

1997-2000: Research Assistant, Department of Electrical and Computer Engineering, Michigan State University.

Summer 1996: Summer Intern, Cornell Theory Center, Cornell University

1995-1996: Teaching Assistant, Department of Electrical and Computer Engineering, Michigan State University.

1990-1994: Instructor, Electrical and Computer Engineering Department, University of Puerto Rico, Mayaguez Campus.

1989 - 1990: Research Assistant, School of Electrical and Computer Engineering, Cornell University

1988-1989: Lab Instructor, Electrical and Computer Engineering Department, University of Puerto Rico, Mayaguez Campus.

## External Funding

- MIT Lincoln Laboratories, Oct 2023 to Sept 2024, $99,989, ""Empowering UPRM Students with Artificial Intelligence and Deep Learning Skills", PI
- NSF, Oct 2023 to Sept 2024, $36,263, "Conference: SF CISE Funding Opportunities for Collaborative Research in Puerto Rico", PI
- NSF, Oct 2022 to Sept 2024, $394,428, "CISE-MSI: DP: IIIS: Hybrid-Architecture Symbolic Parser with Neural Lexicon", Co-PI (PI Hilton Alers-Valentin)
- L3Harris, Oct 2022 to Sept 2023, $15,000, Caribbean Celebration of Women in Computing 2022-2023, PI
- NSF, July 2022 to June 2026, $499,381, "HSI Implementation and Evaluation Project: Paradigm for Sustainability and Resilience Engineering: A Transdisciplinary, Learner-Centered, and Diversity-Focused Approach", Co-PI (PI Christopher Papadopoulos)

- NICR, Jun 2022 to May 2023, $124,868, "Carpool- Based Parking Assignment Policy, Senior Personnel (PI Daniel Rodriguez)
- NSF, Jan 2022 to Dec 2023, $299,642, "CISE-MSI: RCBP-RF: S&CC: A Distributed Framework for Resource Availability Tracking and Decision Making for Power Systems During Natural Disasters", PI
- NSF, Oct 2021 to Sept 2024, $399,965 for UPRM, Total $2,891,942, "BPC-AE: An Extended CAHSI Alliance to Broaden Participation in Graduate Studies", Co-PI, Subaward (PI Ann Gates)
- Microsoft, Jan 2022 to May 2023, Microsoft – UPRM ECE Collaboration 2022, $80,000, PI
- JP Morgan, Aug 2021 to May 2022, JP Morgan - UPRM collaboration 2021, $20,000, PI
- L3Harris, Oct 2020 to Sept 2021, Computer Engineering Project Design Lab, $18500, PI
- L3Harris, Oct 2020 to Sept 2021, $17,500, Virtual Caribbean Celebration of Women in Computing 2020-2021, PI
- Google, Explore CRC program, Aug 2020 to May 2021, $16,000, "Increasing Hispanic Women participation in Undergraduate Computing Research", Co-PI
- General Motors, Oct 2019 to Sept 2020, $4000, GM Embedded systems competition, PI
- Lockheed Martin, May 2020 – Apr 2021, $4,000, "Undergraduate research project: LiDAR Based Autonomous Landing of Unmanned Aerial Vehicles", PI, continuation
- NSF, Sept 2018 – Aug 2023, $480,000 for UPRM, Total $3,665,604.00, "NSF INCLUDES Alliance: Computing Alliance of Hispanic-Serving Institutions", PI at UPRM, Subcontract (PI Ann Gates)
- Google, Explore CRC program, Aug 2018 to May 2019, $35,000, "Increasing Hispanic Women participation in Undergraduate Computing Research", PI
- Harris Corp., Aug 2018 – Sept 2019, $40,000, "A Space for Fostering Creative Thinking in Cyber-physical Systems (CPS) & the Internet of Things (IoT)", Co-Pi (PI Manuel Jimenez).
- NSF, Oct 2018 to Sept 2022, $650,000 A Support Ecosystem to Expand Capabilities and Opportunities for STEM Undergraduates Following Hurricane Maria", Co-PI, (PI Monica Alfaro)
- NSF, Oct 2018 – Sept 2021, $999,906.00, "Recruiting, Retaining, and Engaging Academically Talented Students from Economically Disadvantaged Groups into a Pathway to Successful Engineering Careers", Senior Personnel, (PI Manuel Jimenez).
- Lockheed Martin, May 2018 – Apr 2019, $6,000, "Undergraduate research project: LiDAR Based Autonomous Landing of Unmanned Aerial Vehicles", PI.
- NSF, Oct 2016 – Sept 2021, $332,838 UPRM, total $3,873,960, "BPC-A: Computing Alliance of Hispanic-Serving Institutions--Building a Resilient, Sustainable, and Adaptable CAHSI Ecosystem", Co-PI
- UPRM, Sept 2014 – Jun 2015, $29,450, "Implementing High Impact Best Practices in Education at UPRM", Co-PI
- NEH, Jan 2012 – Jun 2016, $99,737; "The Convergence of Culture and Science: Expanding the Humanities Curriculum Institution: University of Puerto Rico, Mayaguez", Co-PI
- NSF, Dec 15, 2009-Nov 30, 2013; $1,300,00 total, $90,000 for UPRM; "BIAT: A Biomedical Image Analysis Testbed", Co-PI (PI David Kaeli)
- NSF, BPC AE, September 1, 2010 to Aug 31, 2015, $3.6 Million overall, $284,358 for UPRM, "Computing Alliance of Hispanic Serving Institutions", Senior Personnel
- Rectoría UPRM, December 5, 2009 to May 5, 2010, $25,387.00, "Propuesta para la creación de cursos enlace temático en inteligencia artificial", PI Dana Collins, CoPI
- NSF, WIMS ERC, Nov 11, 2009 to Aug 31, 2010, $48,000, "Continuation of Integrating Software and Hardware Components for the WIMS testbeds", PI at UPRM, Subproject of

"An Engineering Research Center in Wireless Integrated Microsystems", $33,910,879, PI Kensall Wise

- NSF, BPC AE, December 1, 2008 to Nov 30, 2012, $1.8 Million total, $201,470 for UPRM, CAHSI: Computing Alliance of Hispanic-Serving Institutions, Senior Personnel
- NSF, CNS, Feb 2008 to Jan 2012, $428,162, "Collaborative Research: BPC-DP: Paving the Road to Professorship for Female Students", Co-PI (PI Nestor Rodriguez)
- NSF, DUE, Mar 2008 to Aug 2011, $149,999, "Improving the Curriculum of Electrical and Computer Engineering through A Wireless Network Testbed: A Vertical Integration Approach", Co-PI (PI Kejie Lu)
- CRA-W and CREW program, $ 9,500, Sept 5, 2008 to Sept 4, 2009, "Evaluating the use of GPUs for Hyperspectral Image Processing", PI
- NSF, Sept 2007 – Aug 2008; $64,994; "Integrating Software and Hardware Components of the WIMS testbeds", PI at UPRM, Subproject of "An Engineering Research Center in Wireless Integrated Microsystems", $33,910,879, PI Kensall Wise
- NSF, Sept 2006 – Aug 2007, $64,994; "Analyzing the Effect of Algorithmic Decisions on Power Consumption", PI at UPRM, Subproject of "An Engineering Research Center in Wireless Integrated Microsystems", $33,910,879, PI Kensall Wise
- NSF, Sept 2005 – Aug 2006; $65,000; "Code Development for the Neural Prosthesis and EMT testbeds for the WIMS ERC", PI at UPRM, Subproject of "An Engineering Research Center in Wireless Integrated Microsystems", $33,910,879, PI Kensall Wise
- NSF, Sept 2004 – Aug 2005; $39,740; "Porting Benchmarks and Environmental Monitoring Testbed Application Coding for the WIMS microcontroller", PI at UPRM, Subproject of "An Engineering Research Center in Wireless Integrated Microsystems", $33,910,879, PI Kensall Wise
- NSF; Feb 2004 – Aug 2004; $20,108; "Evaluation of the WIMS microcontroller and FP support", PI at UPRM, Subproject of "An Engineering Research Center in Wireless Integrated Microsystems", $33,910,879, PI Kensall Wise

## Publications
**NOTE: Undergraduate Research Assistant Students marked in BOLD**

1. C. L. del Puerto et al., "Exploring Servingness for Low-Income Academically Talented Students (LIATS) Through Individual Development Plans (IDPs)," 2023 IEEE Frontiers in Education Conference (FIE), College Station, TX, USA, 2023, pp. 1-5, doi: 10.1109/FIE58773.2023.10343399.
2. P. Quintero *et al.*, "An Industry-Academy Partnership to Bridge the SES Gap in Engineering Education," *2023 IEEE Frontiers in Education Conference (FIE)*, College Station, TX, USA, 2023, pp. 1-4, doi: 10.1109/FIE58773.2023.10343315.
3. Jimenez, M., Guillemard, L., Santiago, A., Santiago, N., Bartolomei, S., Quintero, P., ... & Cardona, N. (2023, June). Boosting Study Program Awareness via a Structured Introductory Experience to Engineering. 2023 ASEE Annual Conference & Exposition.
4. Jimenez, M. A., Guillemard, L., & Santiago-Roman, A. I. (2023). Board 356: Perspectives from an Intervention Model to Improve Retention and Success Among Low-income Hispanic Engineering Students.
5. Santiago-Roman, A. I., Papadopoulos, C., Santiago, N. G., Medina, L. A., & Baiges-Valentin, I. J. (2023, June). Board 142: A New Paradigm for Sustainability Engineering: A Transdisciplinary, Learner-Centered, and DEI-Focused Approach. In *2023 ASEE Annual Conference & Exposition*.

6. L. D. Ramirez-Burgueno, Y. Sang and N. Santiago, "Improving the Computational Efficiency of Optimal Transmission Switching Problems," 2022 North American Power Symposium (NAPS), Salt Lake City, UT, USA, 2022, pp. 1-6, doi: 10.1109/NAPS56150.2022.10012185.

7. L. D. Ramirez-Burgueno, Y. Sang and N. Santiago, "Improving Power System Resilience through Decentralized Decision-Making," 2022 North American Power Symposium (NAPS), Salt Lake City, UT, USA, 2022, pp. 1-5, doi: 10.1109/NAPS56150.2022.10012171.

8. Beheshti, M., Santiago, N., Morreale, P., Gates, A., & Villa, E. (2022, August). Broadening Participation of Latinx in Computing Graduate Studies. In 2022 ASEE Annual Conference & Exposition.

9. Jimenez, M., Guillemard, L., Santiago, N., Santiago-Roman, A., Suarez, O., Quintero, P., ... & Martinez, M. R. (2022, August). Assessing the Effectiveness of The LIAT College Access and Success Model (L-CAS) on Low-income Hispanic Engineering Students (Experience). In 2022 ASEE Annual Conference & Exposition.

10. Santiago-Roman, A., Jimenez, M., Guillemard, L., Bartolomei-Suarez, S., Santiago, N., Suarez, O., ... & Valentin, A. (2022, August). Perceptions of low-income and academically talented students and mentors of [Program Name]-an S-STEM program at a Hispanic Serving Institution. In 2022 ASEE Annual Conference & Exposition.

11. Bartolomei-Suarez, Sonia M, Carla Lopez del Puerto, Pedro O Quintero, Luisa Guillemard, Aidsa I Santiago-Román, Manuel Rodriguez-Martinez, Manuel A Jimenez, Nayda G Santiago, Nelson Cardona-Martinez, Oscar Marcelo Suarez, "Work in Progress: Building Career Goals and Boosting Self-efficacy in Engineering Students". 2021 ASEE Virtual Annual Conference. July 2021.

12. Jimenez, Manuel, Luisa Guillemard, Sonia Bartolomei, Oscar M Suarez, Carla Lopez, Pedro Quintero, Aidsa Santiago, Nayda Santiago, Nelson Cardona, Manuel Rodriguez, "Work in Progress: Building Career Goals and Boosting Self-efficacy in Engineering Students. ASEE Annual Conference Exposition 2021. July 2021.

13. Victor Lugo, Nayda G. Santiago, J Fernando Vega Riveros, Carmen Bellido, "Applying Complexity Theory and Project-Based Learning unto Project Designs of Complex Computing Systems", 2021 ASEE Virtual Annual Conference. July 2021.

14. Hug, Sarah, Martine Ceberio, Diego Aguirre, Scott King, Megan Thomas, Eliana Valenzuela, Tom Carter, and Nayda Santiago. "Reflecting on Reflection: Integrating Critical Thinking into CS Teaching and Learning Practice". In Proceedings of the 52nd ACM Technical Symposium on Computer Science Education, March 2021.

15. Santiago, Nayda, Manuel Jimenez, and Luisa Guillemard. "Combining Strategies for Leadership Development of Engineering Students." In 2020 ASEE Virtual Annual Conference. June 2020.

16. Santiago-Román, Aidsa, Manuel Jimenez, Luisa Guillemard, Sonia Bartolomei-Suarez, Oscar Suarez, Nelson Cardona-Martínez, Carla López del Puerto, Nayda Santiago, Pedro Quintero, and Anidza Valentín-Rodríguez. "Success Expectations of Low-income Academically Talented Students in Engineering: A Preliminary Study at a Hispanic-serving Institution." In 2020 ASEE Virtual Annual Conference. June 2020.

17. Bartolomei-Suarez, Sonia, Manuel Jimenez, Luisa Guillemard, Oscar Suarez, Aidsa Santiago-Román, Nayda Santiago, Carla Lopez del Puerto, Pedro Quintero, Nelson Cardona-Martínez, and Anidza Valentin. "Work in Progress: Impacting Engineering First-year Student Retention Through a Nonconventional Engineering Learning Community." In 2020 ASEE Virtual Annual Conference. June 2020.

18. Hilton Alers Valentin, **Calos G. Rivera-Velazquez,** J. Fernando Vega-Riveros, Nayda G. Santiago, "Towards a Principled Computational System of Syntactic Ambiguity Detection and

Representation", 11th International Conference on Agents and Artificial Intelligence – Natural Language Processing in Artificial Intelligence, ICAART/NLPinAI 2019, Prague, Feb 2019.

19. **Sujeily Fonseca, Samuel Gonzalez, Brian Rodriguez, Chaliana Rolon, Annamary Cartagena, Alberto Canela, Jorge Bobonis, Josean Bosque, Lexdyel Mendez, Melody Seda, Tahiri Fuentes**, "Educational Nanotechnology Videogame to Inspire Middle and High School Students to Pursue STEM Related Professional Careers", Frontiers in Education, San Jose, CA, Oct 2018.

20. Brian Landron, J Fernando Vega-Riveros, Aidsa Santiago, Nayda G. Santiago, "Text Classification of Student Predicate Use for Automatic Misconception Categorization", Frontiers in Education, San Jose, CA, Oct 2018.

21. Lourdes Medina-Avilés, **Ilka Rodríguez-Calero, Juan Nieves-Miranda, Jayson Soto, Wesley Martínez-Camacho, Andrés Malines, Luis Ortiz**, and Nayda G. Santiago, "Decision-Support for the Medical Device Development Process: A Web-based Collaborative Platform", Symposium of Health Informatics in Latin America and the Caribbean & Hacking Medicine in the Caribbean (SHILAC 2015), San Juan, Puerto Rico, Nov 20 – 22, 2015.

22. Dana L. Collins, Nayda G. Santiago, Hector Huyke, Christopher Papadopoulos, J. Fernando Vega, Ana Nieves-Rosa, Anderson Brown, Raul Portuondo, Matias J Cafaro and Matthew Landers, Increasing Student Engagement Through the Development of Interdisciplinary Courses: Linking Engineering and Technology, the Sciences, and the Humanities, Frontiers in Education 2015, El Paso, TX, Oct 21-24, 2015.

23. Jose A. Ortiz, N. G. Santiago, J. G. Colom, HSense: A High-Performance Framework for Distributed Weather Sensor Networks, Ibersensor, Revista Iberoamericana de Sensores, Vol 7, No. 4, 2012.

24. **Gabriel Perez-Irizarry, Francisco de la Cruz-Sanchez**, Brian Landron-Rivera, N. G. Santiago, M. Velez-Reyes. Developing a portable GPU library for hyperspectral image processing. In Algorithms and Technologies for Multispectral, Hyperspectral and Ultraspectra Imagery XVII, Proc. of SPIE, Vol. 8390, 2012.

25. Trigueros-Espinosa, Blas, M. Velez-Reyes, N. G. Santiago, Evaluation of the graphics processing unit architecture for the implementation of target detection algorithms for hyperspectral imagery, Journal of Applied Remote Sensing 6(01), 061506, Jan 2012.

26. B.E. Trigueros, M.Velez-Reyes, S. Rosario-Torres, N. Santiago, "Evaluation of the GPU architecture for the implementation of target detection algorithms for hyperspectral imagery." In Proceedings of SPIE: Algorithms and Technologies for Multispectral, Hyperspectral, and Ultraspectral Imagery XVII, Vol. 8048, April 2011.

27. Magana, A.J., Santiago-Roman, A. Santiago-Santiago, N., Aceros, C., Marshall, B. and Matson, E. (2011). Students Understanding of Computational Problem-Solving Tasks. Proceedings of the 118th ASEE Annual Conference & Exposition. June 26 - 29, Vancouver, BC, Canada.

28. B.E. Trigueros, M.Velez-Reyes, S. Rosario-Torres, N. Santiago, "Evaluation of the GPU architecture for the implementation of target detection algorithms for hyperspectral imagery." In Proceedings of SPIE: Algorithms and Technologies for Multispectral, Hyperspectral, and Ultraspectral Imagery XVII, Vol. 8048, April 2011.

29. D. Mera and N. Santiago. "Low Power Software Techniques for Embedded Systems Running Real Time Operating Systems", . 53rd IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2010, Seattle, Washington, Aug. 2010.

30. D. A. Ortiz and N. Santiago, "Impact of Source Code Optimizations on Power Consumption of Embedded Systems", 2008 Joint IEEE North-East Workshop on Circuits and Systems and TAISA Conference, NEWCAS-TAISA, June 22-25, 2008, p 133-136.

31. **David Gonzalez, Christian Sanchez**, Ricardo Veguilla, Nayda G. Santiago, Samuel Rosario, Miguel Velez-Reyes. Abundace Estimation Algorithms Using NVIDIA CUDATM Technology. Proceedings of SPIE -- Volume 6966, Algorithms and Technologies for Multispectral, Hyperspectral, and Ultraspectral Imagery XIV, 69661E, Orlando, FL, March 2008.

32. D.A. Ortiz and N.G. Santiago. High-level optimization for low power consumption on microprocessor-based systems. 50th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS'07), pages 1265 –1268, Montreal, Canada, Aug. 2007.

33. M. A. Jiménez, N. G. Santiago, J. F. Vega, **C. Rubert, G. Bonilla, I. Torres, C. Maldonado, J. Malavé, and R. Rosario**. Integrating Fundamental and Advanced Concepts in a Rounded Capstone Design Experience in Computer Engineering. Frontiers in Education Conference 2007, (FIE 2007, Milwaukee, Wisconsin, Oct 10- 13, 2007)

34. Jimenez, M., Nieves, A., Santiago, N. G., Lopez, V., Pomales-Garcia, C., and Vega, J.F. (2007, June), An Analysis Of Behavior Patterns In Generation Y Engineering Students And Their Implications In The Teaching Learning Process. Paper presented at 2007 Annual Conference & Exposition, Honolulu, Hawaii. June 24-27, 2007.

35. J. Morales, N.G. Santiago, **A. Fernandez**, "An FPGA implementation of image space reconstruction algorithm for hyperspectral imaging analysis", in Algorithms and Technologies for Multispectral, Hyperspectral, and Ultraspectral Imagery XIII, Sylvia S. Shen; Paul E. Lewis, Editors, Proceedings of SPIE Vol. 6565 (SPIE, Bellingham, WA 2007), 65651V.

36. N.G. Santiago, C. A. Aceros-Moreno, D. Rodriguez, "Performance measures for parameter extraction of sensor array point targets using the discrete chirp Fourier transform", in Signal Processing, Sensor Fusion, and Target Recognition XV, Ivan Kadar, Editors, Proceedings of SPIE Vol. 6235 (SPIE, Bellingham, WA 2006), 62351L.

37. G. A. Chaparro-Baquero, N. G. Santiago, W. Rivera, J. F. Vega-Riveros, "Measuring Quantitative Dependability Attributes in Digital Publishing Using Petri Net Workflow Modeling," 2014 IEEE 12th International Conference on Dependable, Autonomic and Secure Computing, pp. 119-128, 2nd IEEE International Symposium on Dependable, Autonomic and Secure Computing (DASC'06), 2006.

38. Morales, J.; Medero, N.; Santiago, N.G.; **Sosa, J**., "Hardware Implementation of Image Space Reconstruction Algorithm using FPGAs," in Circuits and Systems, 2006. MWSCAS '06. 49th IEEE International Midwest Symposium on , vol.1, no., pp.433-436, 6-9 Aug. 2006.

39. R. Veguilla, N.G. Santiago, D. Rodriguez, "Issues in Terrain Visualization for Environmental Monitoring Applications", in Fourth LACCEI International Latin American and Caribbean Conference for Engineering and Technology, June 21-23, 2006, Mayaguez, PR.

40. Rodriguez, D.A.; Santiago, N.G., "Integrating novel methodologies, tools, and IT resources for graduate level courses in high performance computing and advanced signal processing algorithms," in Information Technology Based Higher Education and Training, 2005. ITHET 2005. 6th International Conference on, vol., no., pp.F3D/15-F3D/18, 7-9 July 2005

41. Jimenez, M.; Santiago, N.G., "The supporting role of CAD/CAM tools in undergraduate research education in electrical and computer engineering," in Information Technology Based Higher Education and Training, 2005. ITHET 2005. 6th International Conference on , vol., no., pp.S3C/23-S3C/26, 7-9 July 2005.

42. Nayda G. Santiago, Diane T. Rover, Domingo Rodriguez, "Subset Selection of Performance Metrics Describing System-Software Interactions", SC2002, Supercomputing: High Performance Networking and Computing 2002, Baltimore MD, November 16-22, 2002.

43. Santiago, N.G.; Rover, D.T.; Rodriguez, D., "A statistical approach for the analysis of the relation between low-level performance information, the code, and the environment", The 4th

Workshop on High Performance Scientific and Engineering Computing with Applications, HPSECA-02, Proceedings of the International Conference on Parallel Processing Workshops, August 18-21, 2002, Vancouver, British Columbia, Canada, Page(s): 282 -289

44. D. T. Rover, N. G. Santiago, **M. Tsai**, "Active Learning in an Electronic Design Automation Course", 1999 IEEE Computer Society International Conference on Microelectronic Systems Education, July 19-21, 1999, Arlington, VA, Page(s) 78 - 79.

45. M. A. Jimenez, N. G. Santiago, D. T. Rover, " Development of an FPGA-Based Scalable Floating Point Multiplier" , 1998 Field Programmable Devices Workshop (FPD'98), Ecole Politechnique de Montreal, Montreal Canada, Jun. 1998.

46. D. Rodriguez, A. Rodriguez, N. G. Santiago, "On the Implementation of Fast Algorithms for Linear Codes Using T805 Microcomputer Arrays", 38th Midwest Symposium on Circuits and Systems, Rio de Janeiro, Brazil , 13 - 16 August 1995, Page(s) 1284 - 1287 vol. 2.

47. D. Rodriguez, N. G. Santiago, "On the Analysis and Design of Linear Codes Using MATLAB and MAPLE", Symposium on Intelligent Systems in Communications and Power, Mayaguez, PR, February 1994.

48. D. Rodriguez, N. G. Santiago, **C. Velez**, "Implementation of a New Class of FFT Algorithms on Transputer Computational Structures", 36th Midwest Symposium on Circuits and Systems, Detroit, MI, 16-18 August 1993, Page(s) 1105 - 1108 vol. 2.


**SYNERGISTIC ACTIVITIES**

1. Lead of the Southeast Region of the Computing Alliance of Hispanic Serving Institutions. CAHSI Alliance between Hispanic Serving Institutions. Role since 2006: ARG Trainer. Promote undergraduate research and the affinity research group model among HSIs and train undergraduate students on research skills to increase the number of Hispanics in computing related areas.

2. Coordinator along with Semillas del Triunfo of the NCWiT Aspirations in Computing Awards Puerto Rico and Virgin Islands. Since 2023.

3. Collaborator with the Semillas del Triunfo of the Semillas Stem Ambassador program. Teach the Computing module to Approx 150 female students from $7^{th}$ to $9^{th}$ grade to learn concepts about computing.

4. Director of the Allyship program at UPRM 2020 to present. A program for Senior Leaders to mentor freshman students in CS and Comp Engr. Sponsor Reboot Representation.

5. One of the three coordinators of the Latina+ session at Great Minds in Stem Conference since Oct 2020.

6. 2017 CRA-E (Education Committee of the Computing Research Association) Undergraduate Research Faculty Mentoring Award for "providing exceptional mentorship, undergraduate research experiences, and, in parallel, guidance on admission and matriculation of their students to research-focused graduate programs in computing".

7. Google Faculty in Residence 2018-2021.

8. Coordinator of Google Tech at UPRM – Technical Exchange program for HBCUs and HSI institutions since 2018 to present

9. Director of the Caribbean Celebration of Women in Computing CCWiC conferences (Since 2014 to present).

10. Director of the Computer Engineering Steering Committee of the Univ. of PR Mayaguez campus. Leading curricular changes in Computer Engineering. Since 2013 to present.

11. Working group for the ACM Council on Diversity & Inclusion, 2017

12. ASEE ECE division Representative to the Diversity Committee, 2017

13. Femprof - Mentored 26 female students on how to write research statements, REU opportunities, scholarships, and research opportunities to encourage them for graduate school, in particular getting a PhD and becoming faculty. Six have completed their PhDs (Columbia, Purdue, Penn State, University College London, Michigan State University, University of Florida) and six still working on getting the PhD (Northwestern, MIT, Harvard, Michigan State University, U Wisconsin Madison, TAMU)

## COLLABORATORS AND OTHER AFFILIATIONS
1. Graduate advisors
   - Dr. Diane Rover, PhD Dissertation
   - Dr. Michael Kelly, MEng Project
2. Current Graduate Students
   - Alberto Canelo, MS EE
   - Alejandro Puente, MS CpE
3. Currently Member of Graduate Committee of
   - Chhaya Katiyar, PhD Student ECE
4. Past Graduate Students, Alumni
   - Gustavo Chaparro, MSCpE, July 2006, Assistant Teaching Professor, Florida International University
   - Javier Morales, MSEE, February 2007, Office Naval Research
   - David Ortiz, MSEE, December 2007, AT&T
   - Ricardo Veguilla, MSCpE, December 2007, Netflix
   - Daniel Mera, MSCpE, July 2010, PhD EE UPRM, Faculty at Interamerican University
   - Jose Ortiz Aquino, MSCpE, December 2012, Apple
   - Manuel Oran, MS CpE, Dec 2014, Optivon
   - Brian Landron, MS CpE, Dec 2016, Head of Engineering, AI Squared
   - Victor Lugo, MS CpE , Hewlett Packard Enterprise
   - Gretchen Quiles, MS CpE, Pratt and Whitney
2. Member of Graduate Committees of Alumni:
   - Hector Santos-Villalobos, MS CpE
   - Amado Pereira Rangel, MS CpE
   - Wilson Lozano Rolon, MS CpE
   - Yuji Yunes, MS EE
   - Mariana Mendoza Botero, MS CpE
   - Michael Rodriguez Meyer, ME CpE
   - Osmarh A Martinez-Sinisterra, MS EE
   - Abigail Fuentes, MS CpE
   - Rieman Dorval Joseph, MS CpE
   - Blas Trigueros Espinosa, MS CpE
   - Danilo Rojas Mendez, MS EE
   - Yahya M. Masalmah, PhD CISE
   - Edgar Ferrer Moreno, PhD CISE
   - Juan Manuel Sola, PhD CISE
5. Additional students
   - 631 BS students supervised in undergraduate research using ARG model

**Professional Activities**
- Member of the Colegio de Ingenieros y Agrimensores de PR (1989 – 2017)
- Lifetime Member of Society for Advancement of Chicanos and Native Americans in Science (SACNAS) (2012 – present)
- Member of ACM (2003 – present)
- Member of the American Society for Engineering Education ASEE (1991-2005, 2017 to present)
- Senior Member of the IEEE (1988 – present)
- Licenced Engineer in Puerto Rico: License 11970 PE until 2017
- Member of Latinas in Computing
- One of the founding members of CAHSI
- One of the founding members of Femprof
- Member of the Academic Committee for Grace Hopper Conference 2010
- Member of the Panels, Workshops and Papers of the Grace Hopper Conference in 2012
- Member of UWIC (Underrepresented Women in Computing) since 2012-2018
- SACNAS Conference Program Committee member (Dec 2012 - Nov 2015)
- Society of Women Engineering (SWE) (1992 - 2006)
- Tau Beta Pi Honor Society (1988 – 2008)
- Phi Kappa Phi Honor Society (1988 – 2008)
- ARG Trainer for the Computing Alliance for Hispanic Serving Institutions (CAHSI) (2010 to present)


**Honors and Awards**
- 2017 CRA-E Undergraduate Research Faculty Mentoring Award. For the large number of supervised students in undergraduate research who obtained advanced degrees.
- 2016 Distinguished Professor of Electrical and Computer Engineering Department Award
- 2011 Women on the Forefront of the Puerto Rico Society of Professional Engineers and Land Surveyors
- 2009 Distinguished Alumni Award of the University of Puerto Rico, Mayaguez Campus, Fundación Alumni Colegial, UPRM (Oct 24, 2009)
- 2008 HENAAC (Hispanic Engineer National Achievement Awards Conference) Education Award (Oct 11, 2008)
- 2008 Distinguished Professor of Electrical and Computer Engineering Department Award
- 2008 Distinguished Computer Engineer Award of the Puerto Rico Society of Professional Engineers and Land Surveyors (May 17, 2008)
- 2007-2008 Distinguished ECE Professor, UPRM (May 5, 2009)

**Professional Development Workshops**
- Engineering for One Planet 2022 - participated Fall 2022 and Spring 2023 poster Presentation
- 19th SEI Software Engineering Educators Workshop, Aug 2-4, 2022
- Olin College 2021 Summer Institute, Participatory Design, June 2021
- Institute on Integrative Learning and the Departments, California State University, Fullerton, July 9-13, 2014

- February 1-2, 2010, 2010 BPC Community Meeting, NSF - Los Angeles CA, Marriott Marina del Rey Hotel [Feb 1, Participatory Sensing: Promoting citizen science, scientific citizens, and computational thinking, 1 hour; Feb 2, Brokering Success: Becoming Institutional Agents for Latinas and Latinos in the Computer Sciences, 1 hour; Feb 2, Promising Practices for working with Community Colleges from BPC projects, 1.5 hours
- May 25 to 27, 2010, ARG Professional Development Program, University of Texas, El Paso
- February 17, 2010- Federal Energy Policy, the Department of Energy and Opportunities for Puerto Rico, CIAPR
- November 18, 2008 - The Dynamics of Great Teams - XX Texas Instruments - UPRM Workshop, 8 hours
- November 13, 2008 - Programa Institucional de transformación ADVANCE IT, NSF grant for Decanato de Asuntos Academicos UPRM, 5 hours.
- November 6-8, 2008 - Engaging Science, Advancing Learning: General Education, Majors, and the New Global Century - Providence, Rhode Island [Nov 6, Science for All - Fostering Faculty Efforts and Institutional Transformation, 3 hours; Nov 7, Teaching and Learning Science: why change and how?, 1.5 hours; Nov 7, Successful Strategies for Attracting Liberal Arts Students to the Natural Sciences, 1.5 hours; Nov 7, Teaching and Learning for Sustainability: Imperative or Option?, 1.5 hours; Nov 7, Using Impossible Problems to Build Engagement in Science and Engineering, 1.5 hours; Nov 7, A New Science Core: Engaging Contemporary Scientific Debates, 1.5 hours; Nov 8, Undergraduate Research and the Two-Year College: Opportunities and Challenges, 1.5 hours; Nov 8, Raising the quality and level of science learning for all students, 1 hour]

**Service**
- Academic Senator, University of Puerto Rico, Mayaguez, since fall 2023 to present
- Committee for the Strategic Plan for UPRM, since December 2023 to present.
- Director of the ICOM steering Committee, currently
- Women Economic Forum, Panelist, Nov 13, 2023, Empowertech.
- EPSCOR National Conference, Panelist, Undergraduate Research, November 15, 2022.
- B-Stream Aguada, Workshops to 3rd to 9th grad students, Intro to Programming, Feb 2019
- ICOM Computing Systems Committee Member, Fall 2008 to Spring 2010
- PhD CISE Program Committee Member, Fall 2008 to Spring 2010
- Recursos Computacionales de Facultad Committee Member, President, Fall 2008 to Spring 2010
- Coordinator of CRL (Computing Research Lab) from Fall 2008 to Fall 2019
- Director of the Cyber-physical Systems and IoT lab, since 2019 to present.