

Curriculum Vitae

Personal data

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Education

- 06/2018 PhD in Computing and Information Sciences and Engineering (CISE), University of Puerto Rico at Mayagüez.
- 06/2007 MSc. in Scientific Computing, University of Puerto Rico at Mayagüez.
- 06/2003 BSc. in Licenciatura en Matemáticas, Universidad Industrial de Santander, Bucaramanga, Colombia.

Research Projects

- 08/2022-present Development of Automated Fluid Delivery System to Advance Neuroscience. In collaboration with Dr. Jos Agosto of the Biology Department of the University of Puerto Rico at Rio Piedras.
- 02/2022-present On existence of a strongly regular graph with $\lambda = 2$ and $\mu = 1$. PI Dr. Edwin Flórez, Co-PI Dr. Rafael Aparicio & M.S. Claudia Ordonez.
- 03/2022-12/2022 Autonomous Computer Aided Assessment System (CAA) using Single-Board Computers (SBCs). CAHSI Local REU. Students: Abner Ortiz, Jonathan Rodriguez.
- 2020-2021 Machine learning techniques in medical imaging-based diagnostics for cardiovascular diseases. Undergraduate Research. Students: Alexander Martinez, Carlos Gonzalez.
- 2020-2021 Strategies to minimize risk factors among health professionals. Undergraduate Research. Student: Britanie Nieves.
- 2019-2020 Long-term multi-parameter assessment of the impact of seasonality and Hurricane Maria on colony measures: A case study of Africanized Honey Bees in Puerto Rico. Undergraduate Research. Student: Stephanie L. Cruz.
- 2016-05/2018 A Novel Framework of Structured Measurement Matrix for Compressed Sensing in Wireless Sensor Networks. PhD thesis. Advisor: Dr. Kejie Lu.
- 08/2014-05/2015 Golden Number's decimal places behavior. High School research project in University Garden HS, PR with the student Gerilizmar Martino. Advisor.

- Summer 2012 A simulated model for distribution of precision time signals using wireless mesh networks, MIT HayStack Observatory. Supported by the Pre-College Summer Research Internship program by AGMUS Institute of Mathematics in the Ana G. Mendez University System.
- 08/2011-08/2012 MRI: Development of a Versatile Service-Oriented Wireless Mesh Network for Disaster Relief and Environmental Monitoring in Puerto Rico. PI, PhD. Kejie Lu, Co-PI PhD. Domingo Rodríguez.
- 08/2011-06/2012 Improving the Curriculum of Electrical and Computer Engineering through A Wireless Network Testbed: A Vertical Integration Approach. PI, PhD. Kejie Lu.
- 12/2010 Winter 2010 Pre-College Research Symposium, CCCE Alliance. Poster winner: Wifi User Location by Fernando Sánchez Santiago.
- 05/2007 New Results in Tournament Matrices, Master thesis. Advisor: Dr. Xuerong Yong.

Talks

- 02/2022 Open house for graduate students in computing at UPRM, National and international graduate student candidates.
- 08/2021 Computer Science in UPRM. Undergraduate program for new students in the Department of Mathematical Sciences at UPRM.
- 03/2015 El hombre que calculaba. 27a. Olimpiada de Matemáticas Nivel Superior, UPR Rio Piedras, PR.
- 04/2012 Interdisciplinary approach for the development of scenarios and active learning materials. Symposium on Research in the Social Sciences (CISO), Mayaguez PR.
- 06/2010 Techno classes, Plenary Talks. Project MSP-UNE, August 13, 2010.
- 02/2007 University of Puerto Rico at Ponce. XXI Inter-university Research Seminar in Math Sciences. Further Results on Tournament Matrices.

Conferences

- October 2022 Great Minds in STEM (GMiS) Pasadena, California.

Seminars/Summits

- 05/2019 Fourth Biomedical Engineering Educational Summit Meeting. Addressing Skills for Career Success. Tinkhan Veale University, Cleveland, OH. (Attender)
- 01/2019 BioTech 82 Bio-informatics for Beginners.

02/2010	University of Puerto Rico at Mayagüez. XXV Inter-university Research Seminar in Mathematical Sciences.
03/2009	University of Puerto Rico at Rio Piedras. XXIV Inter-university Research Seminar in Mathematical Sciences. (Attender)
02/2008	University of Puerto Rico at Carolina. XXIII Inter-university Research Seminar in Mathematical Sciences. (Attender)
02/2007	University of Puerto Rico at Ponce. XXII Inter-university Research Seminar in Mathematical Sciences. (Speaker)

Professional Experience

January-present	Executive representative of Bebras, Puerto Rico.
April 2022	Problem chooser and judge on Math Competition at Colegio Saint Francis, Carolina, PR.
2021-present	Assistant Professor at University of Puerto Rico at Mayaguez in the Mathematical Sciences Department.
2018-2021	Associate professor at Polytechnic University of Puerto Rico in Biomedical Engineering Department.
September 2018	Problem chooser and judge on Math Competition at Colegio Notre Dame, Caguas.
2018-August	Partial time professor Interamericam University at Bayamón.
2018-August	Partial time professor University of Puerto Rico at Humacao.
March 2017	Web site developer and designer of the math teams online competition CO-MATEQ. http://comateq.pr
2016-present	Virtual machine administrator, builder and manager of websites: http://webwork.uprm.edu/webwork2 and http://webwork-test.uprm.edu/webwork2
2015-2018	Puerto Rico Interscholastic Math League member. Web Developer and designer. http://www.priml.pr
May 2015	Problems chooser and judge on the Second Cup Mathematics Brigida Alvarez Rodriguez at Vega Baja, PR.
Summer 2014	Builder and manager of the website: http://webwork.uprm.edu , and programming there math problems in the open WebWork Homework Online System.
2007-2011	University of Puerto Rico at Humacao, Mathematics Department. Instructor.
2004-2007	University of Puerto Rico at Mayagüez, Department of Mathematical Sciences. <ul style="list-style-type: none"> • Webmaster: IFEM (Instituto para el Fortalecimiento de las Matemáticas). • Linux administrator: Graduate Student's Office.

2003-2004 Universidad Industrial de Santander, Mathematics Department.

- Composer with $\text{T}_{\text{E}}\text{X}/\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$: Revista Integración.

Teaching Experience

2021-present University of Puerto Rico at Mayagüez

- Mathematical Sciences Department:
 - COMP3057: Computer Fundamentals
 - COMP3010: Introduction to Computer Programming I
 - COMP3110: Introduction to Computer Programming II
 - COMP4018: Database Systems
 - COMP4036: Programming languages
 - COMP4046: Computer Graphics
 - COMP5055: Parallel Computer
 - (Graduate course) COMP6786: High Performance Computing

2018-2021 Polytechnic University of Puerto Rico

- Biomedical Engineering Department: BME1010, BME3010, BME3020, BME3230, BME4220.
- Electrical & Computer Engineering and Computer Science Department: CECS2200, CECS2203, CECS3210, EAS8000.

2018-August Interamerican University at Bayamón, teaching Calculus I, MATH2251.

2018-August University of Puerto Rico at Humacao. MATE3001, MECU3031 and INGE3016.

2007-2011 University of Puerto Rico at Humacao, Mathematics Department.

- MATE1007, MATE3005, MATE3008, MATE3171, MATE3172
- MECU3021, MECU3032, COMP3005.

2004-2007 University of Puerto Rico at Mayagüez, Department of Mathematical Sciences.

- MATE 0066, MATE 3171, MATE 3143 : Instructor.

2003-2004 Universidad Industrial de Santander, Mathematics Department.

- Calculus I, II, III, Linear Algebra, Superior Algebra: Instructor.

2002 Colegio Psicopedaggico Carl Rogers, Bucaramanga, Santander, Colombia.

- High school mathematics and computer science teacher.

2001 Colegio Nuestra Seora de la Paz, San Vicente de Chucur, Santander, Colombia.

- High school mathematics and physics teacher.

Programming Skills

Prog. Languages: Java, C/C++, Python, Pascal, PHP, Perl, JavaScript.

APIs: OpenMPI, Pthreads, OpenMP, CUDA.

Oper. Systems: Unix/Linux, Windows, MS-DOS, MacOS.

Markup Lang.: $\text{T}_{\text{E}}\text{X}/\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$, HTML.

Math Software: Matlab, Scilab, Octave, Mathematica, Maple, Maxima, GeoGebra, WeBWorK, Jupyter, R.

Hardware Skills

Single-Board Computers: Raspberry Pi, Arduino & PyBoards.

References

- Kejie Lu University of Puerto Rico at Mayagüez. Department of Electrical and Computer Engineering. Phone: 787-832-4040 Ext. 3510. E-Mail: kejie.lu@upr.edu
- Luis F. Cáceres University of Puerto Rico at Mayagüez. Department of Mathematical Sciences. Phone: 787-832-4040 Ext. 2647. E-Mail: luis.caceres1@upr.edu
- Arturo Portnoy University of Puerto Rico at Mayagüez. Department of Mathematical Sciences. Phone: 787-832-4040 Ext. 3171. E-Mail: arturo.portnoy1@upr.edu
- Marlio Paredes Universidad del Valle, Colombia. Department of Mathematics. E-Mail: marlio.paredes@correounivalle.edu.co