

Education

Rice University <i>Ph.D student in Computer Science</i>	Houston, TX, U.S <i>Current</i>
Universidad de los Andes <i>MSc in Electronic and Computer Engineering - GPA: 4.44/5.0</i> Thesis: Embeddings, connectivity and minimum spanning trees in dimensionality reduction	Bogotá, Colombia <i>March, 2011</i>
Universidad de los Andes <i>BSc Electronic Engineer - GPA: 4.16/5.0</i> Graduation project: Hardware/software implementation of Adaboost	Bogotá, Colombia <i>September, 2009</i>

Research Experience

Researcher January, 2018 - July 2019
Universidad de los Andes Bogotá, Colombia

- Supervised three graduation projects of undergraduate students that involved social robots design, machine learning, natural language processing and digital system design.
- Mentored a students project about machine learning applied to kinematic of gait for building an intelligent prostheses
- Collaborated with other researchers to create a competition for students based on ROS to solve the Pac-Man game using artificial intelligence
- Analyzed and replicated the results of a paper: “Dimension Estimation using Random Connection Models”, JMLR.
- Designed and executed a PBL-based methodology to teach programmable logic and microprocessor architectures to electrical engineering students

Researcher January, 2014 - December, 2017
Universidad Santo Tomás Bogotá, Colombia

- Trained and tested a model capable of recognizing human emotions using multimodal signals and deep learning
- Experimented with several algorithms for autonomous path planning and simultaneous localization and mapping for a home-assistant robot
- Developed an environment for the validation of cooperative robot techniques
- Supervised several graduation projects for undergraduate students in electronic system design, machine learning and robotics

Team member, STOX’s robot soccer team January, 2014 - December, 2017
Universidad Santo Tomás Bogotá, Colombia

- Obtained fourth place in RoboCup 2015
- Wrote all qualification team description papers from 2014 to 2017

- Developed and implemented a real-time data-driven chip kick predictor algorithm
- Developed and implemented an optimization algorithm to create dynamic offensive plays
- Developed an optimal assignment algorithm to pair agents and tasks for robotic soccer

Research assistant

January, 2011 - June, 2011

Universidad de los Andes

Bogotá, Colombia

- Developed a ranking algorithm using preference pairwise comparisons for movie ratings based on graph theory

Teaching Experience

Instructor

January, 2018 - July, 2019

Universidad de los Andes

Bogotá, Colombia

- Taught courses in electronic engineering: Introduction to electrical and electronic engineering, analog electronics, electronic digital systems and electronics workshop.
- Designed homeworks and exams
- Graded homeworks and exams
- Prepared and conducted class lectures

Professor

January, 2014 - December, 2017

Universidad Santo Tomás

Bogotá, Colombia

- Taught courses in electronic engineering: Digital systems I, optimization, artificial intelligence, fundamentals of circuits and operating systems
- Designed homeworks and exams
- Graded homeworks and exams
- Prepared and conducted class lectures

Teaching assistant

August, 2008 - December, 2010

Universidad de los Andes

Bogotá, Colombia

- Served as teaching assistant in courses: fundamental of digital systems and optimization
- Graded homeworks and exams
- Prepared and conducted class lectures
- Prepared laboratory tutorials

Working Experience

Research and development engineer

October, 2011 - July, 2012

Accellogic LLC

Sunrise, FL

- Conducted research of several state of the art topics of the company's interest, specifically in the field of high performance computing
- Involved in the design, development, benchmark, testing and documentation of the company's algorithm-based products and prototypes

- Provided technical support for a GPU/FPGA/CPU Linux-based system
- Involved in the preparation of several government funding opportunities and patents
- Proposed and implemented direct and iterative algorithms for the solution of large scale linear systems, eigenvalue problems and general matrix computations

Selected Publications

- **Quintero, C.**, Ríos, M. and Rodríguez, S. Design and implementation of an automatic object recognition system using deep learning and an array of One-Class SVMs. Accepted to appear in IEEE 17th International Conference on Machine Learning and Applications ICMLA 2018.
- Pérez, A., **Quintero, C.**, Rodríguez, S., Rojas, E., Peña, O., De La Rosa, F. Identification of multimodal signals for emotion recognition in the context of human-robot interaction. In Carlos Brito-Loeza and Arturo Espinosa-Romero, editors, *Intelligent Computing Systems*, Springer International Publishing (2017).
- Rodríguez, S., **Quintero, C.**, Pérez, A., Rojas, E., Peña, O., De la Rosa F. Methodology for learning multimodal instructions in the context of human-robot interaction using machine learning. In Carlos Brito-Loeza and Arturo Espinosa-Romero, editors, *Intelligent Computing Systems*, Springer International Publishing (2017).
- **Quintero, C.**, Uribe, R., Calderón, J., Lozano, F. Online pairwise ranking based on graph edge connectivity. In Innovations in Bio-inspired Computing and Applications, 2015.
- **Quintero, C.**, Rodríguez, S., Pérez, A., López, J., Rojas, E., Calderón, J. Learning soccer drills for the small size league of RoboCup. In Lecture Notes on Artificial Intelligence, Springer 2015.
- **Quintero, C.**, Lozano, F. Locally linear minimum spanning trees for manifold learning. In 12th International Conference on Machine Learning and Applications ICMLA 2013.

Awards, Grants & Honours

Fulbright Scholarship	2018
IEEE EVIC 2008 Student Travel Grant	2008

Skills

- Extended experience programming in C/C++, MATLAB and experience programming in Python, R, Fortran and Java
- Extended experience in hardware description languages VHDL and Verilog for FPGA implementation
- Experience with Robot Operating System, UNIX and Windows systems
- **Languages:** Spanish (native), English (fluent)