GABRIEL E. COLÓN-REYES

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EDUCATION

University of California, Berkeley *August 2019 - present*
Ph.D., Electrical Engineering and Computer Science
Relevant coursework: Linear Systems Theory, Nonlinear Systems, Convex Optimization

University of Puerto Rico, Mayagüez *August 2013 - June 2019*
B.S., Electrical Engineering
Relevant coursework: Power System Dynamics and Control, Linear Systems Analysis, Digital Control Systems, Power Electronics Applied to Renewable Energy, Numerical Optimization

Massachusetts Institute of Technology *Spring 2018*
Special Student, Electrical Engineering and Computer Science
Relevant coursework: Feedback Systems Design

RESEARCH INTERESTS

Low-inertia grids: control and optimization; renewable energy integration in the grid; grid-interfaced converter control; control and optimization of power systems; data analytics for power systems; microgrids.

RESEARCH POSITIONS

Graduate Student Researcher *Spring 2020 - present*
University of California, Berkeley – Berkeley, CA.
Explores data-based approaches for learning optimal controllers in low-inertia grids.

GEM Energy Systems Optimization and Control Intern *Summer 2019*
National Renewable Energy Laboratory – Golden, CO.
Implemented a data-based predictive control algorithm for reference tracking.

Project Manager and Undergraduate Researcher – Senior Design Project *Spring 2019*
University of Puerto Rico, Mayagüez – Mayagüez, PR.
Designed, simulated, tested, and implemented a droop-controlled DC microgrid.

Summer Undergraduate Research Fellow *Summer 2018*
Stanford University – Stanford, CA.
Implemented an online learning algorithm to predict power flows in a distribution network.

Undergraduate Research Assistant *Spring 2018*
Massachusetts Institute of Technology – Cambridge, MA.
Designed power system stabilizers for wide-area power systems in the presence of large disturbances.

Undergraduate Research Assistant *Summer 2017*
Massachusetts Institute of Technology – Cambridge, MA.
Studied InGaAs FinFETs' behavior under different operating conditions.

WAVE Research Fellow *Summer 2016*
California Institute of Technology – Pasadena, CA.
Designed a web-based application for electric vehicle charging infrastructure operators.

Undergraduate Research Assistant *August 2015 - May 2016*
University of Puerto Rico, Mayagüez – Mayagüez, PR.
Developed a sinusoidal, piecewise-continuous function for a wind turbine's power output.

Undergraduate Research Assistant *Summer 2015*
University of Massachusetts, Amherst – Amherst, MA.
Evaluated underwater compressed air energy storage potential in the Gulf of Maine.

WORK EXPERIENCE

Electrical Services Engineering Co-Op *Fall 2017*
General Electric, Renewable Energy – Greenville, SC.
Analyzed wind turbine temperature data and its impact on wind turbine power production.

TECHNICAL SKILLS

Software & Tools MATLAB, MATLAB-Simulink, Python, LaTeX, PowerWorld

ACADEMIC ACHIEVEMENTS

Chancellor's Fellowship *August 2019 - present*
University of California, Berkeley – Berkeley, CA.

GEM Fellowship *Summer 2019*
The National GEM Consortium

Georg Simon Ohm Best Student Award *June 2019*
ECE Department, University of Puerto Rico, Mayagüez – Mayagüez, PR.

IEEE Eta Kappa Nu Outstanding Chapter Award, as President *Spring 2019*
IEEE Eta Kappa Nu

Barry Goldwater Scholarship Honorable Mention *Spring 2018*
Barry Goldwater Scholarship and Excellence in Education Foundation

HENAAC Scholar *October 2017*
Lockheed Martin

Top 5% GPA Honor Student *August 2014 - May 2019*
University of Puerto Rico, Mayagüez – Mayagüez, PR.

Dr. Andrés Calderón-Colón Scholarship *November 2016*
Calderón-Colón Family – Mayagüez, PR.

EXTRA-CURRICULAR ACTIVITIES

Vice Chair – IEEE Power and Energy Chapter *September 2020 - present*
University of California – Berkeley, CA.

President – Eta Kappa Nu, Lambda Tau Chapter *January 2017 - January 2018*
University of Puerto Rico, Mayagüez – Mayagüez, PR.

Star Funder – Relay for Life *April 2015*
American Cancer Society – Mayagüez, PR.

Freshman Student Counselor – Team Made *August 2014 - May 2019*
University of Puerto Rico, Mayagüez – Mayagüez, PR.

PUBLICATIONS

S. Baros, C. Y. Chang, **G. E. Colón-Reyes**, A. Bernstein, "Online data-enabled predictive control," *arXiv preprint arXiv: 2003.03866*, 2020. [submitted to *Automatica*].

G. E. Colón-Reyes, C. Y. Chang, A. Bernstein, "Online data-enabled predictive control for inverter systems," *The National GEM Consortium Conference*, September 2019. [Abstract].

G. E. Colón-Reyes, S. J. L. Powell, R. Rajagopal, "Online power flow mapping in distribution networks," *Gulf Coast Undergraduate Research Symposium*, October 2018. [Abstract].