Mayleen Cortez-Rodriguez

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Education

Cornell University August 2020 - Present
Ph.D. Student, Applied Mathematics

California State University, Channel Islands August 2015 - May 2020
Bachelors of Science, Mathematics *summa cum laude*
Minor in Computer Science

Selected Coursework
Numerical Analysis, Abstract Algebra, Measure Theory, Applied Stochastic Processes, Theoretical Statistics, Object-Oriented Programming, Data Structures, Matrix Computations

Publications

- **Cortez-Rodriguez, M.**, Eichhorn, M., and Yu., C. L., "Staggered Rollout Designs Enable Causal Inference Under Interference Without Network Knowledge", In Proceedings of Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS), 2022
- Clark, K. B., **Cortez, M.**, Hernandez, C., Thomas, B. E., and Lewis, A. L. "Combating Tuberculosis: Using Time-Dependent Sensitivity Analysis to Develop Strategies for Treatment and Prevention", Spora: A Journal of Biomathematics, 2019: Vol 5.1. 14-23.

Preprints

- **Cortez-Rodriguez, M.**, Eichhorn, M., and Yu., C. L., "Exploiting Neighborhood Interference with Low Order Interactions under Unit Randomized Design." arXiv:2208.05553 (2022).

Conference Presentations

- "Staggered Rollout Designs Enable Causal Inference without Graph Knowlegde", *Neural Information Processing Systems Conference* (NeurIPS), New Orleans, LA, November 2022.
- "Exploiting Neighborhood Interference and Low-Order Interactions for Causal Inference", *Neural Information Processing Systems, Causal Machine Learning for Real-World Impact Workshop*, New Orleans, LA, November 2022.
- "Finding Waldo: An Investigation into Machine Learning for Object Detection", *Mathematical Association of America Southern California Regional Conference*. Camarillo, CA, April 2019.
- "Combating Tuberculosis: Using Time-Dependent Sensitivity Analysis to Develop Strategies for Treatment and Prevention", *Joint Math Meetings* (JMM). Baltimore, MD, January 2019.

Undergraduate Research Experience

Undergraduate Program, Mathematical Sciences Research Institute — Summer 2019
- Collaborated on an applied combinatorics research project on peaks in parking functions
- Utilized SageMath and Python to advance the research

Mathematics Department, California State University, Channel Islands — Spring 2019
- Created a machine learning model to detect the Waldo character from the *Where's Waldo* series
- Utilized Amazon Web Services to train and implement machine learning models

Mathematics Department, California State University, Channel Islands — Fall 2018
- Worked on developing a collection of Python scripts that assist in real-time detection of hot-spots on solar panels via unmanned aerial vehicles
- Explored the Python library OpenCV, concepts in digital image processing and others' work in computer vision to create original code

Emerging Scholars Program, St. Mary's College of Maryland — Summer 2018
- Developed a compartment model for the spread of tuberculosis in different types of regions
- Created scripts in R to run simulations and obtain experimental results
- Delivered weekly oral presentations on research progress

University Involvement and Service

Cornell University
- *Center for Applied Math Mentoring Program*: Coordinator — Fall 2021 - Present
- *ZigZag Mentoring Program, Association for Women in Math*: Mentor — Spring 2022
- *K-12 Education and Outreach, Math Department*: JRMF Volunteer — Spring 2021, Spring 2022
- *The Enhancing Diversity in Graduate Education Program*: Panelist — Summer 2021
- *Expanding Your Horizons Virtual Conference*: Volunteer — Spring 2021
- *ZigZag Mentoring Program, Association for Women in Math*: Mentor — Fall 2020 - Spring 2021
- *CURB Grad School Demystified*: Panelist — Fall 2020, Fall 2021

California State University, Channel Islands
- *Data Science Club*: Founding President — Fall 2019 - Spring 2020
- *Math Club*: Treasurer — Fall 2019 - Spring 2020
- *Louis Stokes Alliance for Minority Participation*: Scholar — Fall 2018 - Spring 2020
- *College for a Day (Middle School Outreach Program)*: Volunteer — March 2018

Employment Experience

Mathematics Department, California State University, Channel Islands Fall 2019 - Spring 2020
Instructional Student Assistant

- Tutored students in calculus and statistics
- Put together study guides with practice problems and step-by-step solutions

Project PROMESAS, California State University, Channel Islands Spring 2018 - Spring 2019
Instructional Student Assistant

- Tutored students in mathematics and computer science
- Helped students develop good study habits and strategies

Language and Technical Skills

- English and Spanish, fluent, both written and verbal
- Proficiency in LaTeX, Python, MatLab, Microsoft Office, Windows OS, and Mac OS
- Familiarity with Java, C, R, and Julia programming languages

Awards and Recognition

Graduate Research Fellowship, National Science Foundation Awarded Spring 2020
Sloan Graduate Diversity Fellowship, Cornell University Awarded Spring 2020
Outstanding Poster Presentation, CSU Channel Islands Spring 2019
Outstanding Oral Presentation, CSU Channel Islands Spring 2019
Outstanding Poster, Mathematical Association of America (MAA) Spring 2019
Scored on the Putnam Exam, MAA Putnam Competition Fall 2018
Outstanding Oral Presentation, CSU Channel Islands Fall 2018
Semester Honors, CSU Channel Islands Fall 2015 - Spring 2017, Spring 2018 - Spring 2020