Alejandro Ortega

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Education

Duke University, Durham NC — August 2015 - May 2019

A.B. Mathematics, B.S. Computer Science — Overall GPA: 3.618

Relevant Coursework — Computer Science GPA: 3.827

Data Structures and Algorithms, Regression Analysis, Linear Algebra, Probability, Computer Architecture, Computer Security, Operating Systems, Database Systems, Analysis of Algorithms, Combinatorics, Topological Data Analysis, High Dimensional Data Analysis

Skills

Programming Languages
Proficient: C/C++, Java, Python, SQL
Familiar: HTML, CSS, JavaScript, R, MATLAB

Software and Tools
Git, Linux, LaTeX

Experience

Internet at the Speed of Light Research Group at Duke, *Undergraduate Researcher* — August 2018 – May 2019

- Designing experiments to benchmark and evaluate the McKay Brothers' microwave network for a three-month research period.
- Analyzing data gathered by the MyAdPrice project to assess how ad latency impacts revenue in header bidding, and determine infrastructural inefficiencies.

Calderbank Research Group at Duke, *Undergraduate Researcher* — August 2018 – May 2019

- Developing an algorithm and designing quantum circuits that simplify the Kerdock unitary design under the mentorship of Dr. Robert Calderbank.

Duke Computer Science, Mathematics Departments, *Teaching Assistant* — August 2018 – May 2019

- CS 371D Machine Learning: Instructed a recitation section of 20 students, developed curriculum, hosted office hours, graded exams and assignments
- CS 590 Graduate Level Computer Security: Course logistics, graded assignments
- CS 310 Operating Systems: Hosted office hours, graded exams and assignments
- Math 218 Linear Algebra: Graded assignments

Duke Data+ Program, *Data Science Intern* — May 2018 – August 2018

- Recruited to work on the client Power For All's **Platform for Energy Access Knowledge** in a team of 3 interns
- Engineered a Python application that automated data extraction from PDF documents with a success rate significantly above currently available open source tools
- Refined the search engine by auto-categorizing documents using natural language processing and ontological frameworks
- Automated data collection via a Python web-scraper that identifies relevant documents by a logistic regression model

Duke Data+ Program, *Data Science Intern* — May 2017 – August 2017

- Engineered a Java web-scraper that created a unique data set by accessing the AP Images Collection, conducting reverse image searches for relevant articles, and compiling article text into a database
- Conducted statistical analyses and programmed a website that contains project results, including interactive JavaScript visualizations. The site can be visited here: **413j4ndr0.github.io/syrian-refugee-crisis-project**
- Presented this project in a panel discussion sponsored by the John Hope Franklin Humanities Institute in Spring 2018