# 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**, *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