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EDUCATION

University of Iowa, Iowa City, Iowa
Ph.D of Pure Mathematics (In Progress)
Master of Science in Mathematics

May 2016
Dec 2014

University of Northern Iowa, Cedar Falls, Iowa
Master of Arts in Mathematics

Jul 2010

University of Puerto Rico, Rio Piedras Campus, San Juan, Puerto Rico
Bachelor in Mathematics

May 2009

SKILLS

- **Expertise:** Data Analysis, Data Visualization.
- Strong Python and SQL Programmer. Strong HTML5/CSS3 and Bootstrap3 Developer.
- Experience with: Machine Learning, Natural Language Processing, Web Scraping, Github, Pandas, NumPy/SciPy, D3, Bokeh, Flask, Heroku, JSON, Analytics, Probability/Statistics, Twitter API, L^AT_EX.
- Basic Knowledge of: R, Spark, Scala, Hadoop, MapReduce, C++, JavaScript.
- Dominance of English and Spanish.

EXPERIENCE

The Data Incubator, Washington, D.C.
Fellow
Certificate in Data Science
Capstone Project: <http://iokilos.herokuapp.com>

Jan 2016–Feb 2016

- Analyzed the distribution of world records in Olympic Weightlifting using the Naive Bayes Classifier from Scikit-Learn. Also developed an app for strength athletes' training cycles using Clustering Algorithms. The data was scraped from over a thousand pages from various websites.

Selected Projects:

- **Big data related:** Conducted open-ended analysis of user behaviors on 9+GB of StackOverFlow XML data using Scala, and Spark. Analyzed 10+GB of XML data from Simple English and Thai Wikipedia with MapReduce.
- Web scraping and social graph analysis of more than 100,000 photo captions from NYC Social website using Python (Networkx, BeautifulSoup, and Pandas).
- Developed pipelines with Python (Scikit-Learn) for predicting star reviews for businesses based on Yelp's academic dataset. Performed Natural Language Processing analysis on Yelp's academic dataset, 325+MB of json data, with Python (NLTK and Scikit-Learn).
- Analyzed New York food inspection reports for the last 4 years, approximately 530,000 records, using advanced SQL and Python (Pandas).

Topology Research, University of Iowa
Graduate Research Student
Professor Charles Frohman

Aug 2012 – Dec 2015

- Developed a method for reducing the exponential time of Skein computations in Quantum Topology to linear.

University of Puerto Rico, University of Northern Iowa, Florida State University, University of Iowa.

Instructor and/or Teaching Assistant

Jun 2004 – Dec 2015

Taught and/or TAed for a wide range of college courses, from Precalculus to graduate courses in Topology. Been in charge of classes with more than a hundred students.

SELECTED

The Localized Skein Algebra Is Frobenius

PUBLICATIONS & AWARDS

N. Abdiel and C. Frohman, in *Journal of Knot Theory And Its Ramifications*

Jan 2016.

Ballard-Seashore Fellowship, University of Iowa.

Jan 2016 – May 2016

Awarded for outstanding contributions to the field of Topological Quantum Field Theory.