

# JOSHUA F. PEDRO

New York, NY

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## EDUCATION

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### The City College of New York

August 2017 - May 2020

Master of Science in Mathematics

- Graduate courses include Machine Learning, Stochastic Processes, Advanced Mathematical Statistics, Complex Analysis and Real Analysis.

### University of Guyana

September 2012 - May 2016

Bachelor of Science in Economics

## TECHNICAL SKILLS

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### Computer Languages

Proficient in Python, SQL, Matlab, Mathematica, R

### Relevant Tools

Keras, Pytorch, TensorFlow, Numpy, Pandas, Scikit-learn, XGBoost, NetworkX

## EXPERIENCE

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### The City College of New York

May 2020 - Present

Rich summer intern

- Worked with a team of research scientists (RxCOVEA) to develop models in **Python** to understand medical datasets on patients infected with COVID-19. The data consists of 75 features for which **XGBoost** was used to select those features which are most important. We also created a function in **Pytorch** that takes data from blood samples of patients as input and outputs a survival probability with a validation accuracy of 93.9%. We are currently working on creating an open-sourced web dashboard for public use.

### City University of New York

August 2018 - Present

Adjunct Lecturer & Teaching assistant

- Managed and lectured courses to 40+ undergraduate students including multivariable calculus, differential equations, probability & statistics, statistical programming in **Matlab** and **Mathematica**. Assisted in grading projects and exams and providing detailed feedback to students taking a postgraduate course in statistics. Projects required the use of technical software such as **R** and **Python**.

### Wolfram Research

July 2019 - December 2019

Student Researcher

- Developed an algorithm in **Mathematica** for generating images using new techniques in the area of normalizing flows. Discovered a self-normalizing activation function which is the derivative of Lipswish that produced better results.

### The City College of New York

May 2018 - October 2018

Rich summer intern

- Developed visualizations and simulations using **NetworkX** in **Python** and graphs in **Mathematica** for the purpose of simulating dynamic social networks with rich features such as degree heterogeneity and homophily.

## AWARDS AND INVOLVEMENT

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Awarded the Dr. Barnett and Jean Hollander Rich Mathematics Summer Internship for outstanding students in Mathematics in 2018 and again in 2020.

Awarded certifications on DataCamp which includes courses on Python programming, Deep learning, XGBoost.

Elected Vice President of the University of Guyana's Economics Society in 2015.