Francis Eshun

Recent Mathematics Graduate
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Education

Bachelor of Science in Mathematics — *Amherst, Massachusetts*
University of Massachusetts Amherst — *Completed: Spring 2021*

- **Concentrations:** Computing & Statistics
- **Relevant Coursework:** Regression Analysis, Algorithms and Data Structures, Data Visualization, Applied Cryptography, Combinatorics and Graph Theory, Mathematical Modeling

Relevant Projectwork

Predicting Apple Stock Return Volatility — *Amherst, Massachusetts*
Senior Integrative Project — *Spring 2021*

- Responsible for remediating outlying and influential observations in regression model.
- Analyzed returns of tech industry stocks, CBOE Volatility indexes and the S&P 500 for correlations in Apple Stock Volatility from 2018-2020
- Collaborated with colleagues to create a validated regression model achieving 72% fit

Georgia Covid-19 Analysis — *Amherst, Massachusetts*
Undergraduate Project — *Spring 2021*

- Created data visualization maps and graphs of demographics and disease transmission with R
- Gathered public health data about the spread of COVID-19 in Georgia
- Utilized regression analysis and hypothesis testing on data to draw conclusions from data

COVID-19 Differential Model — *Amherst, Massachusetts*
Undergraduate Project — *Spring 2020*

- Researched epidemiology models for ways to track the spread of diseases.
- Developed a predictive differential model for the spread of COVID-19 virus with MATLAB.
- Analyzed public health data from New York and South Korea's spread of COVID-19.
- Merged predictive model with public health data to predict the trend of virus spread.

4-Dimensional Toroidal Tic-Tac-Toe and SET — *Amherst, Massachusetts*
Undergraduate Research Paper — *Spring 2020*

- Researched the relationship between the classic card game SET and four-dimensional tic-tac-toe upon a torus.
- Analyzed the ways a four-dimensional torus could be used to answer combinatorial questions about SET.
- Discovered new variations to create new SET cards based upon higher dimensional tic-tac-toe.

Skills

Programming	Java, Python, Javascript, HTML5/CSS
Data Analysis	Data Visualization, Regression Analysis, Data Cleaning
Software	RStudio, MATLAB, Microsoft Excel, SolidWorks CAD, LaTeX