

## EDUCATION

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| <b>Clarkson University</b><br><i>PhD, Applied Mathematics – GPA 3.89/4.0</i><br>▪ Research: Algorithms, Deep Learning, Image Processing, Statistics & Probability, Linear Algebra | <b>Fall 2021 – May 2024</b><br><i>New York</i> |
| <b>Clarkson University</b><br><i>MS, Applied Mathematics – GPA 3.89/4.0</i><br>▪ Coursework: Machine Learning, Numerical Analysis, Probability, Statistics, Data Mining           | <b>Fall 2019 – May 2021</b><br><i>New York</i> |
| <b>University of Ghana</b><br><i>BS, Statistics – GPA 3.24/4.0</i><br>▪ Courseworks: Computational Methods, Python Programming, Statistical Methods, Data Analytics               | <b>Oct. 2014 – Nov. 2018</b><br><i>Accra</i>   |

## SKILLS

- Programming (Python, Java, Matlab, R, C++, Java, Octave, Linux shell)
- Data Analytics and Visualization (Pandas, Numpy, OpenCV, Matplotlib, Tableau, ggplot2)
- Database Management (SQL, MySQL, SparkSQL, Pandas, MongoDB, Alteryx)
- Statistical Analysis (JMP, SPSS, R, Sampling Plans, Survival Analysis, Multiple Regression)
- Machine Learning (Tensor flow, Scikit-learn, NLP, Text Mining, Speech Recognition)

## WORK EXPERIENCE

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| <b>Regeneron Pharmaceuticals</b><br><i>Statistician (Intern)</i><br>▪ Cleaned, visualized, and performed statistical analysis of change control data using JMP, Alteryx, and Tableau<br>▪ Initiated a dashboard development for real-time monitoring of change controls and implemented alert mechanisms using Python-Dash.<br>▪ Designed and executed experiments to identify critical factors for statistical tests, utilizing statistical software JMP to enhance the accuracy and reliability of analyses                                                                                                                                             | <b>May. 2023 – Aug. 2023</b><br><i>Troy, NY</i>  |
| <b>Clarkson University</b><br><i>Graduate Research Fellow</i><br>o Lead the design of STEM-based research projects for high school students, fostering their critical thinking skills<br>o Instruct students in circuit building and coding, utilizing C++ and arduino kits to enhance their technical proficiency<br>o Mentor students in research methodologies, providing guidance in the research process, and supporting them in presenting their findings.                                                                                                                                                                                          | <b>Potsdam, NY</b><br><b>Aug. 2023 – Present</b> |
| <b>Data Scientist</b><br>o Mined graduation and retention rates from large student data of Clarkson University and then I visualized the data using ggplot2 in R to identify any features that affect graduation and retention rates.<br>o Evaluated the effects of "Retention measures" on graduation and retention using statistical inference tools in R<br>o Presented findings to the Retention committee, and also Published the findings in a peer-review research journal                                                                                                                                                                         | <b>Sep. 2021 – May. 2023</b>                     |
| <b>Bagelry</b><br><i>Machine Learning Engineer</i><br>▪ Mined and analyzed historical weather data and sales data for a local food-chain restaurant, utilizing SQL query tools for efficient data retrieval<br>▪ Applied advanced machine learning tools in Python such as; Scikit-learn and Tensorflow to develop and fine-tune regression models, decision trees, and neural networks for accurate daily sales predictions.<br>▪ Visualized complex interactions between weather data and sales within the data to uncover patterns and improve prediction accuracy. Used model to predict foot traffic and provide input for employee shift schedules. | <b>Jun. 2021 – May. 2022</b><br><i>Remote</i>    |
| <b>Science Solutions Center</b><br><i>Supply Chain Operations Manage</i><br>▪ Developed and maintained a comprehensive schedule using Microsoft Excel to streamline the flow of educational resources to schools and individuals<br>▪ Implemented data analytics techniques to identify efficiency gaps in the supply chain, leading to a 20% improvement in resource delivery times                                                                                                                                                                                                                                                                      | <b>Jun. 2017 – May. 2019</b><br><i>Accra</i>     |

- Collaborated cross-functionally to enhance inventory management processes, ensuring timely availability of educational materials for diverse stakeholders

## PERSONAL PROJECTS

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**Stack:** Python, OpenCV, Sklearn, NLTK, Pandas, Numpy, Seaborn

- **Face Recognition (CV):** Built a Real-Time Face Mask Detection System predicting whether or not a person wears a mask
- **Spam Detection (NLP):** Developed an SMS classifier that returns with a level of accuracy if a message is spam or not
- **Image Processing:** Built deep learning models to reconstruct missing data in crystallographic orientation data maps
- **Dimensionality Reduction & Clustering:** Implemented a k-means clustering algorithm for multi-dimensional data.
- **Multiclass Classification:** Implemented a digit recognition using multiclass logistic regression and gradient descent.
- **Drug Resistance Modeling:** Modeled chemotherapy drug resistance dynamics in cancer cells with different modes of delivery.
- **Data Encryption using Matrix Cryptography:** Implemented matrix encryption and decryption algorithms in python and tested their robustness.

## PUBLICATIONS & PRESENTATIONS

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- RAPS Spring 2023, Measuring the Impact of Student Success Retention Initiatives for Engineering Students at a Private Research University
- JMM 2023, Weighted Total Variation flow for Crystallographic Data Reconstruction}, {Jan 4, 2023}
- MCCNNY 2022, Weighted Total Variation flow for Crystallographic Data Reconstruction}, {March 26, 2022}
- SIAM IS22, Weighted Total Variation Based Algorithm for Reconstruction of Grain Orientation Data : A Comparative Study
- SIAM MS21, Partial Differential Equation Based Methods for Reconstruction of Grain Orientation Data
- Measuring the impact of student success retention initiatives for engineering students at a private research university (Frontiers in Education Journal Dec2022)
- Restoration of Noisy Orientation Maps from Electron Backscatter Diffraction Imaging (Integrating Materials and Manufacturing Innovation Journal Aug2023)