

PRINCE AGYEI TUFFOUR

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EDUCATION

Oregon State University – Corvallis, Oregon, USA

Sept 2021 - Dec 2023

Major: Mathematics, MS

Relevant Coursework: Linear Algebra, Programming and Data Structures (Python), Probability, Applied Machine Learning, Numerical Analysis, Methods and Models of Applied Mathematics (Python), Uncertainty Quantification, Quantum Computing, Simple Random Walks, Monte Carlo Methods.

Honors: Distinguished Provost Scholar, 2021

Kwame Nkrumah University of Science and Technology – Kumasi, Ghana

Sept 2016 - May 2020

Major: Mathematics, BS, magna cum laude, Top 1%

Relevant Coursework: Discrete Mathematics, Linear Algebra, Numerical Analysis, Probability, Statistics, Regression Analysis, Scientific Computing, Optimization, Introduction to Computer Programming (Python), Calculus.

Honors: Overall Best Student, Mathematics Department (2017, 2018, 2019, 2020)

Online Certification: Machine Learning (Coursera), Machine Learning Specialization (Coursera), Deep Learning Specialization (Coursera), JP Morgan Software Engineering Virtual Experience Program (Forage)

PROJECTS

Machine Learning Web App for Salary Prediction

- Developed a machine learning model with 85% accuracy in predicting software development salaries, leading to more informed hiring decisions and a 30% reduction in hiring costs.
- Implemented a machine learning model to predict software development salaries based on various inputs.
- Showcased the integration of machine learning models into user-friendly web interfaces, enhancing accessibility and practicality.

Facial Recognition Research Project

- Authored a research project on the efficacy of PCA, KL Expansion, and SVD in preprocessing for facial recognition.
- Demonstrated an understanding of key machine learning techniques and their application to improve facial recognition.
- Reduced dataset size from 10,000+ images to 150 eigenfaces, resulting in an 80% accuracy improvement in facial recognition performance, enhancing security protocols and user experience.

Baseline Network Generation Tools for OPUS Projects

- Engineered a user-friendly GUI application with PySide6 for generating baseline networks in OPUS projects, facilitating dynamic design and visualization with interactive map rendering, RINEX data processing, and XML configuration file generation.
- Developed Python scripts utilizing geospatial libraries to analyze RINEX data, calculate inter-station distances, identify optimal single-hub locations, visualize networks with folium maps, and integrate XML parsing for OPUS project configuration.
- Architected file loading and data management using pandas and PyQt6, with a robust database system in SQLite and SQLAlchemy, ensuring efficient storage and retrieval of user preferences and selections across application sessions.

GPU Memory Profiler

- Contributed to the development of a GPU Memory Profiler, resulting in a 30% reduction in memory usage and a 25% increase in processing speed for deep learning tasks.
- Involved in memory tracking, visualization tool creation, and profiling report generation, showcasing cross-functional collaboration and technical problem-solving.

MyPass Password Manager

- Built a personal offline password management system to save passwords to local computers securely.
- Implemented a search feature where users can look up passwords by the name of the website/username.

- Optimized user experience by generating strong random passwords that are automatically copied to the clipboard and added to an encrypted JSON file only accessible to the user.

SKILLS

- **Programming languages:** Python, Javascript, C++, MATLAB, R, MySQL
- **Experience with:** PyTorch, Tensorflow, Keras, Machine Learning/Deep Learning Algorithms, Bash, Nodejs, jQuery, HTML 5, CSS 3, React, PostgreSQL, MongoDB, Flask, Django, AWS, Docker, Google Cloud Platform, Linux/Unix, Git, Express, RESTful APIs

EXPERIENCE

Oregon State University - Corvallis, Oregon March 2024 - June 2024

Black Student Success Grant Program Director

- Directed the implementation of the Black Student Success grant, resulting in a 20% increase in on-track freshmen, a 25% boost in attendance, and a 30% rise in graduation rates among Black students in the Portland Metro area.
- Spearheaded the alignment of OSU's academic success programs, leading to a 30% improvement in retention and persistence rates for underserved students.
- Cultivated and sustained relationships with community partner, Elevate Oregon, facilitating the achievement of programmatic goals and milestones.

Oregon State University - Corvallis, US

Sept 2021 - Dec 2023

Graduate Teaching Assistant

- Instructed 230+ students in Calculus, Algebra, and Analysis, leading to a 15% improvement in average exam scores and a 20% decrease in course withdrawal rates.
- Gained classroom management and communication skills explaining complex concepts.
- Provided individual support to help students master challenging material. Held office hours twice weekly to strengthen students' understanding of course material.

The AFEX Hub - Ghana/Kenya

June 2016 - July 2021

Database Management Specialist

- Led the implementation of indexing improvements and normalization techniques, resulting in a 50% reduction in query run times and a 40% increase in database query performance.
- Designed and implemented new database architectures, data models, and schemas to support application releases and new development projects. Migrated legacy systems to new database platforms.
- Provided expert-level SQL query tuning, analysis, and troubleshooting to resolve complex performance issues. Reduced query run times by over 50% through indexing improvements and normalization.

FLEEF Ghana - Ghana

Sept 2018 - Feb 2019

Software Developer

- Collaborated with a team of developers to design and implement a responsive and interactive website using Python, HTML, CSS, and Javascript, with Flask as the backend framework and Heroku as the hosting platform.
- Designed and implemented a responsive website, resulting in a 45% increase in website traffic and a 20% rise in user engagement metrics.
- Trained and tutored mentees on ethical leadership, and organized weekly seminars, educational trips, and curriculum-based learning activities.

CAMPUS INVOLVEMENT

- **American Mathematical Society, Participant, Oregon State University, Sept 2021 - Present**
- **Society for Industrial and Applied Mathematics, Participant, Oregon State University, Sept 2021 - Dec 2023**
- **Artificial Intelligence Graduate Students Club, Participant, Oregon State University, Sept 2022 - Dec 2023**

HOBBIES AND INTERESTS

- Soccer, won intramural soccer tournament, OSU 2022
- **Others:** drumming, tennis, table tennis, dancing, anime, reading fiction and non-fiction books, photography