Kwabena Aboagye-Otchere

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WORK EXPERIENCE

SecLearn Lab ● UTRGV
08/2023 - Present
Research Assistant

- Contrasted poisoning strategies in federated and ML models using HPC, Python and CUDA to highlight architectural vulnerabilities
- Implemented low-cost eavesdropping on electric motors with IoT and deep learning with 90% task-classification accuracy
- Conduct literature reviews of 4 research papers per week and recreate experiments to explore gaps for future work

Kalangu ● Ashesi University
04/2022 - 08/2023
Backend Engineer

- Enabled multi-content (PNG, PDF, MP4 etc) upload, storage, compression, rendering and reformatting using Amazon S3, Amazon Cloudfront and FFMPeg to facilitate online teaching and learning in low-resourced regions in West Africa
- Designed and implemented relational DB logic in line with ACID principles using visual-paradigm and Amazon RDS for efficient scaling
- Optimized logic to reduce HTTP requests by up to 65% across multiple pages via eager-loading and caching
- Managed CI/CD pipeline using Git, Laravel Vapor and AWS Lambda to enhance code quality and minimize outages

Computer Science Department ● Ashesi University
08/2021 - 05/2023
Faculty Intern

- Designed modern course syllabi with faculty for Data Science, OOP and Advanced Algorithms courses to establish clear learning goals
- Provided general and specific feedback alongside grades to facilitate student self-evaluation and proactive learning
- Formulated specialized study plans for failing students which yielded an average 35% pass rate after projected failure

Versatilis Group ● Accra
11/2022 - 03/2023
Full-stack Engineer

- Automated threat monitoring updates using Linux cron and Laravel's task scheduler to streamline data updates and minimize downtime
- Integrated Kafka with Flask for real-time threat data processing from social media, reducing notification time to potential threats by 75%
- Enhanced ReactJS frontend with dynamic ChartJS components for improved user engagement and data-driven decision making

PROJECTS

GalXR - Hackathon Project for Massachussets Institute of Technology RealityHack
01/2024

- Utilized ShapesXR, MetaQuest 3 and Unity (C#) to develop a fully-functional immersive learning application within 3 days
- Collaborated in a team of 4 with a supervisor to build a virtual chemistry lab that facilitates safe scientific exploration for students

Recommender System (RS) for Massive Open Online Courses (MOOCs)
09/2023 - 12/2023

- Developed a data-parsing pipeline using regex and bash to clean and encode semi-structured data to train an RS
- Built a novel RS for MOOCs based on the actor-critic algorithm using Python and CUDA to ease user navigation on online course platforms
- Designed a custom reward function that enabled self-supervised learning of a model with a validated 84% likelihood of enrollment

Repsyche - Intermediate Computer Programming Class Project
03/2019 - 04/2019

- Defined functional and non-functional requirements, a sequence diagram to facilitate project scoping and impact evaluation
- Developed a mobile app using the android native development kit, Java and C++ to facilitate responsible trash management on campus
- Conducted unit and user testing to assess functionality and user experience to identify bugs, limitations and potential future features

AWARDS & SCHOLARSHIPS

Presidential Research Fellowship
08/2023

The most honorable scholarship granted by the UTRGV College of Engineering and Computer Science to exceptional students

EDUCATION

MS in Computer Science

University of Texas Rio Grande Valley (UTRGV) ● Edinburg, Texas ● GPA: 3.9
08/2023 - 05/2025

Relevant Coursework: Theory of Computation, Advanced Algorithms, Computer Architecture, Reinforcement Learning

BSc. in Computer Science

Ashesi University ● Berekuso, Ghana ● GPA: 3.34
09/2017 - 06/2021

Relevant Coursework: Software Engineering, Discrete Math, Data Structures and Algorithms, Data Science, Web Technologies