Ifechukwudeni Teddy Oweh

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Education

Tarleton State University, Stephenville Texas **January 2022 – May 2025**

Computer Science & Mathematics, Con. - Artificial Intelligence & Data Science

Work & Research Experience

Apple Inc. **May 2023 – Present**

AI/ML Engineering Intern *Cupertino, California*

- Developed AI models for Apple Home ecosystem optimization, including quality index (device ranking) algorithms, crash prediction, and proximity-based warnings .
- Created a Python library with core functions in C, compiling it into a shared library for feature engineering and custom ensemble AI algorithms to train models.
- Developed a REST API with integrated AI models for system performance monitoring, individual device predictions, and analysis, including an automated temporal analysis system for model refinement and a multi-threaded scheduler for daily analysis.
- Designed a pixel-perfect WEBUI for data aggregation from the REST API, focusing on visualizing ecosystem and device performance over time, on-demand device ranking for crash and proximity-based warning identification
- Refined and migrated Legacy Apple HomeKit SQL Metric System to production.
- Secured a position in the top 10 finalists for the Apple iContest (intern ideathon).

NASA - National Aeronautics and Space Administration **Aug 2022 – May 2023**

Research Payload Engineer *Huntsville, Alabama*

- Designed and Developed a payload system for a sub-scale rocket launched at 4600fts to execute diverse image processing operations based on received commands from a custom SDR Radio Receiver tasks during flight
- Developed real-time flight status monitoring via a custom-built UDP server, integrating data from the altimeter and gyroscope for comprehensive analysis

NAVSEA - Naval Sea Systems Command **July 2022 – Mar 2023**

Research AI/ML Systems Engineer *King George, Virginia*

- Developed ML-based algorithm for optimal weapon pairing against adversarial actions, utilizing greedy search and Markov Chains for proactive decision-making and enhanced war-fighting capabilities.
- Employed Naïve Bayesian classification to mathematically derive probabilities and validate weapon combinations, improving for automated scheduling and coordination of weapon systems

TIAER - Texas Institute for Applied Environmental Science **Jan 2023 – May 2023**

Computational Modelling Student Researcher *Stephenville, Texas*

- Refined legacy code in VB.net to C++ to compile and deploy on AWS Linux systems for computational models systems in environmental research, and fixed bugs on a Ruby on Rails software application for simulating and estimating nutrient and sediment losses from crop and pasture lands - *Website*

Tarleton State - Machine Intelligence Security and Research Lab (MISR) **February 2022 – Present**

Lead Student Researcher *Stephenville, Texas*

- Developed a Mini Batch RINDEX hybrid feature engineering algorithm for machine learning models, combining filter-wrapper techniques with feature clustering using the Rand Index cluster quality metric for optimal feature selection and computational efficiency.
- Implemented data partitioning, and distributed parallel computing to reduce training time.

Tarleton State - Mathematics Department **May 2022 – August 2022**

Student Researcher *Stephenville, Texas*

- Integrated stochastic processes on complex networks using differential equations to create infectious disease models, calculating disease susceptibility rates and recovery probabilities, and implementing epidemiological frameworks for enhanced disease spread simulation.

Projects

NeuronIO | *Git*

- Implemented a custom Transformer neural network architecture with custom layers, activation functions, backpropagation, optimizers, loss functions, and extended C shared libraries for vector store embedding operations

SLIC | *Git*

- Developed and Released a python package that optimizes client-server communication via TCP connections, reducing latency through efficient protocols and data serialization algorithms. An alternative to REST API

QuantX | *Git*

- Developed C++ modules for real-time stock data collection, market analysis, AI-driven position sizing, and data insights, dynamic hedging strategies, monte carlo simulations, and slippage modeling for risk reduction and strategy enhancement.

WHOTAI | *Git*

- Developed an ensemble machine learning model for the Naija Whot card game (similar to UNO), incorporating parallelization for training corpus generation and a distributed system game simulation with the Model. The ensemble integrates a Random Forest algorithm developed from scratch with corpus vector embeddings.

Afterhours

- Developed a full-stack web and mobile app to allow college students find students with same major, integrating middleware-driven HTTP APIs and WebSocket functionality with Node.js. Utilized MongoDB for data management. Implemented a cross-platform UI using React Native (mobile) and ReactJS (web).

Technical Skills

Languages/Database: Python, C++, C, Ruby, Scala, SQL, MongoDB, PostGres
Frameworks& Tools: Pytorch, Tensorflow, Sklearn, Tableau, Docker, Kubernetes, Caffe, Coreflow
Frontend: Swift, ReactJs, Angular, React Native, Flutter
Backend: Nodejs, NestJS, Java, Flask, FastAPI