Oromidayo Owolabi *Software Engineer*

owolabioromidayo16@gmail.com +234 9071632139 github.com/owolabioromidayo

Education

Covenant University, *B.Eng, Computer Engineering* 2018 – 2023 | Nigeria
GPA : **4.79 / 5.00** (*First Class Honours*)

Professional Experience

Center for Genomics and Precision Medicine, *Bioinformatician* Dec 2023 – present | Nigeria
- Writing high performance code to process hundreds of Gigabytes of genome-wide sequencing data
- Performing quality control and copy number variation analysis of genomic databases, using Python and Bash
- Writing custom scripts for annotation extraction of neuroimaging data using Python
- Working on an integrated GPU short-read sequence aligner pipeline in C++/CUDA
- Researched potential gains of implementing BLAST algorithm on GPUs

Recurse Center, *Participant* Mar 2024 – May 2024 | New York (Remote)
- The Recurse Center is a self-directed retreat for programmers who want to learn and grow.
- Worked on a rigid-body physics engine and 3D object renderer in C++/OpenGL
- Worked on a system for extracting context from PDFs for generating flashcards with generative audio and LLMs
- Did some light kernel hacking, learned some Haskell, learned a lot about database systems and Rust

University of Ibadan Design Studio, *Engineering Intern* Apr 2022 – Aug 2022 | Nigeria
- Independently designed and constructed a Solar Powered Weather Station with IoT capabilities
- Deployed a self-retraining Weather Prediction service on AWS Lambda
- Implemented a backend service and a dashboard for station management and data visualization
- Wrote firmware code for sensor interfacing, power conservation, and configurable WiFi capabilities using C and FreeRTOS, reducing power consumption by over 200%
- Ported an I2C Driver for the Si1145 sensor to C and wrote driver code for the GUVA-S12SD sensor

Fireswitch Technologies, *Software Developer Intern* Sep 2021 – Dec 2021 | Nigeria
- Led the frontend development of ReniNotes from scratch using React.js
- Worked with a UI designer and backend engineers to create a functional user interface
- Ported state management to Redux, leading to a 30% increase in code maintainability

Projects

YugoDB, *Rust* Apr 2024 – present
- Developing a polymorphic database storage engine from scratch in Rust
- Implemented a generic B+ tree index, a concurrent multi-file disk pager with a caching system, and a TCP server
- Wrote abstractions to support document-oriented, relational, row, and column databases, tables, pages, and records
- Created a custom query language and interpreter, to support queries and joins across all storage types
- Worked on a vector materialization model for the query executor, and serialization-deserialization methods for records

LightBox, *Python, Flask, React, SQL, WebSockets* Dec 2022 – Jun 2023
- Created a federated queueing platform for GPU processing in AI photo editing applications
- Implemented a GPU Client that runs txt/img2img, inpainting, outpainting, upscaling and removal operations
- Wrote a queueing server which connects GPU clients via WebSockets and handles task scheduling
- Built a frontend photo editing application with a generalization layer to support various models
- Designed a server-server protocol for federation and trust-based priority scheduling to manage bad actor

Cpplox, *C++* Sep 2023
- Wrote a tree-walk interpreter for a dynamically typed language from scratch in C++
- Implemented lexical scoping and resolution, control flow, functions, and closures
- Investigated performance issues using heaptrack, flamegraphs, and profile-guided optimization

ZCamp, *TypeScript* May 2022 – Aug 2022
- Worked in a team of 2 on the development of a forum for university students with subgroups
- Wrote robust backend functionality using Node.js, TypeScript, GraphQL, PostgreSQL, and Redis
- Implemented key features such as posting, user points, voting systems, and nested comments

SLAMBot, *Python, Flask, Linux* Aug 2022
- Created a web interface for controlling and streaming video output from a 4WD robot with Flask
- Implemented line following using ROS and person tracking using YOLOv4 with video stream overlays

Activities

Open Source Contributor Mar 2024 – Apr 2024

- Wrote python code, documentation, and tests for the **Humanitarian Open Street Maps** project.
- Wrote a **mobile app generator** using Python/Kivy for their core CLI project with support for logging
- Wrote **extensive API tests** for their AI mapping project using Python/Django
- Worked on **internal features** for the osm-fieldwork project

Payaza Hackathon, *Top 5* Oct 2023

- Worked in a team of 5 to create a platform for generating online customer service and fulfilment chatbots.
- Implemented weighted sentiment analysis and catalogue generation for vendors using Python
- Wrote a vector search system to filter out catalogue based on user queries using LangChain
- Applied prompt templating techniques and Retrieval Augmented Generation for a better chat experience

3LINE Hackathon, *3rd* Apr 2023

- Worked in a team of 3 to develop an AI platform for payment processing using Python/Flask/React.js
- Implemented a speech-based payment engine using OpenAI Whisper and zero-shot classification on Distill-BERT
- Profiled autoencoders for Fraud Detection and wrote server code to interface the AI with the frontend application

Skills

Software: Python, C, C++, Rust, Javascript, Typescript, Go, Java, Bash, **Tools:** Linux, React.js, Node.js, Flask, PyTorch, Redux, Git, Docker, AWS, SQL, MongoDB, PostgreSQL, ROS 2

Certificates

- A Beginner's Guide to Linux Kernel Development (May 2024)