Felix Ike. Okoronkwo

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EDUCATION

Nnamdi Azikiwe University   Anambra, Nigeria
Bachelor of Engineering in Electronics and Computer Engineering   *Sept. 2019 – Sept. 2024*
Second class [Upper Division]

EXPERIENCE

Independent System Programming   2023 – Present
Independent Work   *Remote*
- Developed a BitTorrent protocol application featuring concurrent socket management, peer-to-peer networking, and efficient data exchange, with multithreaded design to support simultaneous connections and scalable file distribution
- Tested several multithreading techniques for C++ applications, implementing system locks, pipeline integration, and thread-safe execution while gaining practical understanding of the C++ memory model, synchronization primitives, and concurrent data structures

Undergraduate Project Assistant–Final Year Project   Jun. 2024 – Oct. 2024
Nnamdi Azikiwe University   *Anambra, Nigeria*
- Participated in a large-scale 3.5 kVA, 50 Hz SPWM-based pure sine-wave inverter project. Responsible for verifying and validating output sine-wave quality using an oscilloscope, ensuring waveform accuracy and stable operation.
- Gained hands-on exposure to system-level inverter architecture, control modules, and protection circuitry within a real-world power electronics project

Technical Training Program   Aug. 2022 – Oct. 2023
ALX Africa–Holberton School   *Remote*
- Developed standalone implementations of core data structures, sorting algorithms, and search algorithms in low-level C, with supporting helper functions to enhance flexibility and reuse
- Developed a full-stack property rental web application with property listings, and booking functionality using Flask, Vanilla HTML/CSS and SQLAlchemy
- Deployed and maintained a Linux-based Nginx web server, configuring routing, virtual hosts, and DNS A-records, and securing the application with SSL/TLS for encrypted HTTPS access

PROJECTS

BitTorrent Application Layer Protocol | *Modern C++, Libcurl, Boost.Asio*   Sept. 2025 – Present
- Developed a Bencode Decoder and Encoder to enable peer communication in network sessions
- Implemented a Peer manager responsible for choking, unchoking and managing individual peer connections
- Implemented a serving mechanism responsible for sending data pieces to unchoked connected peers
- Implemented a concurrent pipeline responsible for feeding received data pieces, hashing them and sending them on to a file managing mechanism that stores said pieces to the designated location on the storage device of the device the application is being ran on
- Implemented a simple multithreading API that allows multiple instances of the BitTorrent protocol to be ran simultaneously

Simple Property Rental Web Application | *Python, LAMP stack, SQLAlchemy*   Mar. 2023 – Jun. 2023
- Implemented a python REST API to search availability and process booking requests with persistence in MySQL via SQLAlchemy
- Deployed and routed traffic using Nginx and Haproxy, and automated server configuration with Puppet
- Configured DNS to expose application publicly during deployment

TECHNICAL SKILLS

Languages: Modern C++, C, Java, Python, SQL (MySQL)
Technical Skills: Multithreading, Networking, Socket Programming, Linux, Git, CMake, Visual Studio
Libraries: STL, LibCurl, Boost.Asio, SQLAlchemy, sdl2, Requests