MADI ABIO

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EDUCATION

Bachelor of Electrical Engineering (Honours) / Bachelor of Computer Science
2022 – 2026 | Griffith University | Gold Coast, QLD

International Trimester Exchange
2024 | University of Utah | Salt Lake City, Utah, USA

AWARDS & SCHOLARSHIPS

- **Academic Excellence |** *Griffith University, 2024*
- **Academic Excellence |** *Griffith University, 2023*
- **Amplify Connector |** *Energy Queensland, 2025 – Present*
- **Future of Energy Scholarship |** *Energy Queensland, 2023 – 2025*
- **Chancellor's Scholarship |** *Griffith University, 2025*
- **Students in Power Bursary |** *Australian Institute of Power, 2022 – 2023*
- **Brighter Futures Scholarship |** *The Abedian Foundation, 2022*

WORK EXPERIENCE

Junior Software Engineer *August 2025 – Present | VPTech | Gold Coast, QLD*
Contributing to the design, development, and maintenance of a cloud-based patient management platform, with a focus on scalability, reliability, and compliance in healthcare settings. Supporting deployment processes and assisting with the development and integration of AI-driven features, including LLM-powered tools for patient management and workflow automation.

Grid Technology Intern *Jan 2025 – Present | Energy Queensland | Brisbane, QLD*
Investigated a machine learning solution to the detection of neutral faults targeting deployment across 10,000 smart meters (see: Neutral Fault Detection). Streamlined a 15-minute daily task into ~15 seconds by building a solar panel data dashboard in Python and Power BI while applying agile and waterfall project management principles by facilitating weekly stakeholder sprints. Automated workflows for non-technical staff and organized two networking events for interns and graduates with over 65 attendees each.

Undergraduate Research Assistant *Mar 2024 – Jun 2024 | Griffith University | Gold Coast, QLD*
Processed and cleaned data for a machine learning project using Python and the HDF5 scientific file format. Wrote Bash scripts to assist various tasks such as down sampling wav files. Worked in a Unix environment and CLI extensively. Communicated progress to supervisor on a weekly basis.

Cyber Security Platforms Intern *Nov 2023 – Feb 2024 | Energy Queensland | Brisbane, QLD*
Applied understanding of network and security protocols by assisting cyber-related ServiceNow tickets. Sought out learning opportunities by completing various trainings such as Google's IT security and computer networking courses. Had exposure to cloud security, firewall management via Panorama, Netskope and general enterprise cyber security practices.

PROJECTS

Neutral Fault Detection | *Python, Feb 2025 (Ongoing)*
Implemented an approach to neutral fault detection using anomaly detection methods based upon the findings of an internal research paper. Prototyped a scalable architecture and packaged the solution as a Docker image to enable deployment across 10,000 smart meters. Increased the amount of available labelled data tenfold. Performed initial feasibility analysis on subset of data with scikit-learn models. Created a model development toolkit in Python to support rapid prototyping. Performed feature engineering. Parallelized feature extraction and model

training. Identified and analysed sources of model bias and error. Data labelling, cleaning and preprocessing. Identified and trialed methods for improvement.

Encryption Client | *C++, May 2025*
Followed object-oriented programming principles and applied C++ specific concepts to develop an encryption client that supports multi-round encryption and decryption. Wrote unit tests with GoogleTest framework. Version control with Git.

Solar Site Management Service Dashboard | *Python, Jan 2025*
Performed requirements analysis. Used third-party APIs, web scraping and Power BI to develop tool to collect, consolidate and visualise solar panel data. Automated the program's set-up process with Bash scripts. Developed documentation to support hand-over to non-technical end-users. Developed in enterprise environment. Engaged with end-users weekly via sprints. Version control with Git.

Stopwatch on DE10-Lite FPGA | *Verilog, Nov 2024*
Designed a single digit stop-watch with inputs for reset, start/resume and stop/pause. Applied modular design principles by separating the stopwatch into 3 modules: finite state machine (FSM), clock divider and display. The FSM facilitated sequential counting, the display module was a binary to 7-segment converter and the clock divider ensured the FPGA's high-frequency clock was slowed to second-wise increments. Debugged with waveform analysis. Wrote testbenches to verify function and performance.

Multiplayer Snake.io Clone | *C#, Oct 2024*
Applied understanding of networking protocols, client-server architecture and model-view-controller architecture to build a snake.io clone with .NET framework. Stored server state information in an SQL database to support multiple games running in parallel. Collaborated with a peer using Git.

Neural Network from Scratch | *Python, Jun 2024*
Implemented a 3-layer neural network from scratch to classify articles of clothing from image data.

Parallelized Mandelbrot Set Generator | *C, Sept 2023*
Parallelized generation of the Mandelbrot set using multi-threading and multi-processing. Wrote benchmarks to compare the performance of different parallelization techniques (fork with pipes, fork with sockets, OpenMP).

CLUBS & SOCIETIES

- ICPC Div B Competitor & Member| *Griffith University Coding Club (GCC), 2025 – Present*
- Member | *UQ Computing Society Competitive Programming Group (CPG), 2025 – Present*
- Member | *UQ Fintech Society, 2025 – Present*
- Member | *Griffith University Advanced Robotics Development (GUARD), 2023 – Present*
- Administrator | *Griffith University Gold Coast IEEE Student Branch, 2023*

OTHER WORK EXPERIENCE

- Summer Camp Counselor | *Keystone Camp, 2024 (North Carolina, USA)*
- Team Member (Trade Desk) | *Bunnings, 2021 – 2024 (Gold Coast, QLD)*
- Video Content Producer | *The Katrina Ruth Show, 2020 – 2021 (Gold Coast, QLD)*
- Photo/Videographer | *Freelance, 2017 – 2020 (Gold Coast, QLD)*

SKILLS

- Software development (Python, C, C#, C++, Bash, Batch)
- Applied machine learning, data science & AI
- Data structures & algorithms
- FPGA and embedded system design (SystemVerilog, RTL coding, simulation, testbenching, Embedded C)
- GitHub / Version control with Git
- Object-oriented programming
- .NET framework
- Unix and command-line interface
- Test-driven development and unit testing (MSTest, GoogleTest)
- Technical writing
- Problem solving
- Teamwork and communication