# MADI ABIO

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**High achieving penultimate year Electrical Engineering and Computer Science student with skills in machine learning and data science. Experienced with software development in Python, C, C# and C++. Excels at teamwork and communication.**

## EDUCATION

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

**International Trimester Exchange**
*2024 | University of Utah | Utah, USA*

## AWARDS & SCHOLARSHIPS

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

## WORK EXPERIENCE

**Grid Technology Intern**                *Jan 2025 – Present | Energy Queensland | Brisbane, QLD*
Currently investigating, implementing and iteratively improving an in-house machine learning approach to neutral fault detection. Condensed a 15-minute daily process into 10-30 seconds by delivering a solar panel data dashboard developed with Python and Power BI using both agile and waterfall project management principles. Communicated with stakeholders and supervisor weekly via sprints. Automated various processes for non-technical team members. Organized and facilitated two engineering networking events for interns and graduates with turnout of ~50-70 attendees.

**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 opportunities to increase knowledge 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

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

**Neutral Fault Detection |** *Python, Feb 2025 (Ongoing)*
Implementing an approach to neutral fault detection using anomaly detection methods based upon the findings of an internal research paper. Performed feasibility analysis using scikit-learn models. Developed a set of manually

validated data. Performed data cleaning, preprocessing and analysis. Currently completing a data pipeline prototype that uses multithreading to accelerate feature extraction and model evaluation.

### Solar Site Management Service Dashboard | *Python, Jan 2025*

Performed requirements analysis. Used third-party APIs, web scraping and Power BI to develop a tool that collects and visualises data for company solar sites from different services. Wrote scripts in Bash to automate the program's set-up process for product hand-over to non-technical end-users. Developed in enterprise environment. Evaluated scalability. Engaged with end-users to ensure requirements were met effectively via weekly 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: 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 using waveform analysis. Wrote exhaustive testbenches to verify function and performance.

### Multiplayer Snake.io Clone | *C#, Oct 2024*

Applied client-server architecture and understanding of networking protocols to build a snake.io clone with .NET framework. The client followed model-view-controller architecture, and the entire project was built following test-driven development practices (with MSTest framework) where possible. 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. Wrote tests to evaluate the accuracy and run-time of the network when trained on different numbers of epochs and at different mini-batch sizes.

### Parallelized Mandelbrot Set Generator | *C, Sept 2023*

Parallelized generation of the Manedelbrot set using multi-threading and multi-processing. Wrote tests to evaluate and compare the performance of fork with pipes, fork with sockets and OpenMP for the parallelization of different aspects of the program.

## CLUBS & SOCIETIES
- o Club Member | *Griffith University Advanced Robotics Development, 2023-Present*
- o Club Administrator | *Griffith University Gold Coast IEEE Student Branch, 2023*

## OTHER WORK EXPERIENCE
- o Team Member (Trade Desk) | *Bunnings, 2021-2024 (Gold Coast, QLD)*
- o Video Content Producer | *The Katrina Ruth Show, 2020-2021 (Gold Coast, QLD)*
- o Photo/Videographer | *Freelance, 2017-2020 (Gold Coast, QLD)*
- o Service Representative | *Domino's Pizza, 2019-2020 (Gold Coast, QLD)*
- o Café All-Rounder | *Michel's Patisserie, 2019 (Gold Coast, QLD)*

## SKILLS
- o Software development (Python, C, C#, C++, Bash, Batch)
- o FPGA design (Verilog, VHDL, RTL coding, simulation, testbenching)
- o Applied machine learning and AI
- o PCB design (Altium)
- o Data science and analytics
- o GitHub / Version control with Git
- o Object-oriented programming
- o .NET framework
- o Unix and command-line interface
- o Test-driven development and unit testing (MSTest, GoogleTest)
- o Writing documentation
- o Problem solving
- o Teamwork and communication