

FINLAY MUIR

ELECTRICAL AND ELECTRONIC ENGINEERING AT THE UNIVERSITY OF STRATHCLYDE

📍 3 Homesteads, FK83AW, Stirling

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SKILLS

Electrical and Software

- Python, C, CSS, Html, **VHDL**.
- **Altium** used to draft 3D engineering drawings and custom PCB design.
- **MATLAB** used on various projects involving the creation of **linear regression models** for weather prediction, and simulating stateflow.
- **Soldering** and wiring.
- **C++** used for game development and arduino microcontroller projects.
- Implemented **KVL** and **KCL** to mitigate circuit analysis problems.

Mechanical

- **AutoCAD, Autodesk Inventor**.
- Machined several components using **mill, lathe, drill press** etc.

PROJECTS

VHDL Thermostat System

- Heater thermostat and display system using **Basys3 FPGA** board.

Automated Mini-grid designer

- **Python** project utilising packages including **networkx** and **matplotlib**.

EDUCATION

BEng in Electrical and Electronic Engineering

Sep 2021 - April 2025

- 2nd year pass with Merit
- Term average: 83.24%

EXPERIENCE

2021 *Keysight Technologies | Edinburgh* *Electrical and Electronic Engineer*

- Led the development and simulation of a traffic light state machine system using Moore semantics in **MATLAB Simulink** for design validation.
- Manufactured an FM transistor radio, testing resistance values and **soldering** components to a **PCB** to measure the effect of electronic interference on received signal quality.
- Designed and modeled a switch mode power supply circuit using **PSpice**, conducting stress testing of over-voltage, under-voltage and short circuit conditions to determine how effectively the SMPS circuit converts AC power to stable DC power.

2023 *Vertically Integrated Projects | Glasgow* *Software Engineer (Renewables)*

- Led the creation and development of a **Python**-based mini-grid design tool (GridMaster) to automate and reduce mini-grid design processes, and subsequently increase access to clean energy.
- Designed a **Flask** web application and integrated the mini-grid tool to visualise the design process and increase tool accessibility.
- Implemented a capacitated minimum spanning tree algorithm utilising data structures like disjoint set, to optimise mini-grid network designs and reduce BOM costs by 15%.
- Consulted industry experts in decentralised renewable energy projects to create **AutoCAD** drawings of current mini-grid implementations and accumulate case studies.
- Validated mini-grid designs using **ArcGIS** against case studies to measure value of tool and gain insight into future developments.

EXTRA CURRICULAR

Formula Student | Electronics Vehicle Engineer | Glasgow 2021-2023

- Designed and fabricated a mounting system for a potentiometer suspension sensor.
- Optimised sensor (LIDAR, Radar, Cameras) configurations to increase sensor coverage and reliability, while reducing cost by 12%.
- Improved BOM accumulation process by utilising **Autodesk Inventor**, generating component design drawings to accompany part data.
- Designed a custom PCB for a telemetry system which collected, processed and transmitted real-time battery temperature data using **Altium**, improving car performance and driver strategy.