SHAW CAMPBELL

Website | campbellshaw8@gmail.com | LinkedIn | GitHub | Cell: 0797336179

> Graduate software developer with a BSc Eng (Hons) in Electrical & Computer Engineering from UCT. Experienced across the full stack - from embedded systems and PCB design through to enterprise web applications and deep learning research. Known for picking up new technologies quickly, thriving in Agile teams, and a consistent record of academic distinction, including two Dean's Merit List awards and a merit-based full bursary.

WORK EXPERIENCE

Graduate Software Developer — PSG Financial Services

2026 – Present

Building and maintaining production web applications, working across a .NET / Angular stack. Write ene-to-end tests using Playwright in C#.

C# · .NET · ASP.NET · Angular · Agile · Web Development

Software Engineering Vacation Work — Peralex Electronics

2025 · 5 weeks

Designed and built a Python desktop application for visualising and navigating openEMS electromagnetic simulation results across multiple antenna types. Participated in the full Agile workflow - sprint planning, stand-ups, and peer code reviews.

Python · OOP · Desktop App Development · Agile · Electromagnetics

Software Development Intern — Electrum Payments

2024 · 4 weeks

Delivered a real feature on a live company codebase, embedded within the engineering team across stand-ups, planning sessions, and code reviews. Received a full-time offer at the conclusion of the internship.

Java · Spring Boot · OOP · REST APIs · Agile

Signals and Systems II Tutor (EEE3092F)

Jan – Jul 2025 · 4 months

UCT-employed tutor for the third-year signals engineering course, covering Fourier and Laplace transforms, filter design, and discrete-time systems.

Signals and Systems I Tutor (EEE2047F)

Aug – Nov 2025 · 4 months

UCT-employed tutor for the second-year signals engineering course.

Control Systems Laboratory Assistant

2023 & 2024 · 6 weeks per year

Developed, debugged, and maintained software and hardware for a proportional gain control circuit used in undergraduate labs, applying C# and PLC programming alongside hands-on electronics.

Computer Science Tutor — Python (CSC1015F)

2023 · 6 months

UCT-employed tutor for the introductory programming course.

Computer Science Tutor — Java (CSC1016S)

2023 · 6 months

UCT-employed tutor for the introduction to OOP and Java course.

SELECTED PROJECTS

Deep Learning Deformable Registration of Ultrasound to MRI for Prostate Imaging

Thesis · 2025 GitHub

Final-year honours thesis investigating weakly supervised deep learning for deformable registration of transrectal ultrasound (TRUS) and MRI in prostate imaging. Built on a modified VoxelMorph architecture, the work compared intensity-based metrics (MSE, NCC) against label-driven loss functions across 2D and 3D models. Found that unsupervised intensity metrics fail across modalities, while weakly supervised label-similarity models produce anatomically consistent deformation fields. Demonstrated that affine preprocessing via ANTs is essential for stable convergence, and that non-rigid augmentation improves robustness without degrading generalisation.

Python · PyTorch · VoxelMorph · ANTs · Jupyter Notebooks · Medical Image Analysis

Micro-Mouse — Sensing & Power Subsystems

Embedded · 2024 GitHub

Designed and implemented the infrared sensor subsystem and power subsystem for an autonomous maze-solving micro-mouse, interfacing with an existing motherboard and dual-motor drive. Covered the full embedded development loop: KiCad PCB layout for the custom IR sensor board, STM32L476 firmware, power regulation circuitry, and subsystem integration testing.

C · STM32L476 · KiCad · Embedded Systems · PCB Design · Electronics

TaskFlow — CPU-Inspired Task Scheduler

C++ · 2025 GitHub

A back-end C++ task scheduler that adapts classical CPU scheduling algorithms for human productivity planning. Implements non-preemptive SJF and a dynamic Priority scheduler with deadline-aware aging, modelling tasks with release times, deadlines, and priority levels. Designed around the Strategy and Factory patterns with clean separation between the input model, scheduling logic, and results. Reports per-schedule metrics including response time, waiting time, and throughput.

C++ · OOP · Design Patterns · Scheduling Algorithms · CMake

EDUCATION

BSc Eng (Hons) — Electrical & Computer Engineering

University of Cape Town · 2021 – 2025

- Graduated with Honours (GPA > 70%), thesis in medical machine learning **Honours**
- *Dean's Merit List* — 2022 & 2023 **×2**
- UCT Plus Gold Award — 60 hours of voluntary community service for UCT (2023)
- PSG Full Merit Bursary — 2024 & 2025 **Merit**

EXTRA-CURRICULARS

Student Residence Mentor

Jan 2022 – Nov 2023 & Jan 2024 – Nov 2024

– Supported first-year students through the academic and social transition into university life across two separate years.

IT & Maintenance Representative — Leo Marquard Hall House Committee

Jan 2023 – Nov 2023

– Built and maintained a website for the campus residence.
– Provided IT support across the residence community.

TECHNOLOGIES

Python | Java | C# | C / C++ | .NET & ASP.NET | Angular | HTML · CSS · JavaScript | Spring Boot | STM32 / Embedded C | PyTorch | Linux | KiCad | Jupyter Notebooks