DAVID YOUNG

Software Engineer | MSc Researcher @ UCT | Building FERS

dev@astraen.dev GitHub LinkedIn Portfolio

I'm a software engineer who enjoys solving hard problems. I don't just write code; I care about how the whole system fits together. Whether it is a mobile app or a complex physics engine, I focus on making it fast, clean, and easy to use. Right now, I am getting my Master's degree at UCT. My main project is redesigning a one-of-a-kind high-performance C++ radar simulator (FERS) to make it modern and powerful. Outside of research, I run astraen, my own development lab where I build apps and tools for myself and freelance clients.

EXPERIENCE

astraen

Oct 2025 - Present

Developer & Founder

I started my own business for personal projects and freelance work.

- Specializing in transforming raw ideas into actionable technical blueprints.
- Architecting robust, scalable, and maintainable foundations for modern applications.
- Executing full-cycle development from concept and strategy to deployment and quality assurance.

The DataFlow

Nov 2024 - Jul 2025

Co-founder & Founding Engineer

Led engineering for a mobile app empowering users to monitor and control mobile data usage.

- Built the full stack from the ground up in Flutter/Dart and Kotlin.
- Implemented a custom on-device firewall using Android VpnService.
- Established the app's architecture, local database design (Drift/SQLite), and CI/CD workflows.
- Integrated Firebase for authentication, analytics, and crash reporting.

Arixian

November 2023 - January 2024

Software Engineering Intern

Developed microservices for secure optic-data streaming for an AI-driven security startup.

- Built microservices using Python.
- Hardened secure communication protocols against intrusion.
- Containerized applications using Docker.
- Collaborated with the team to enhance system security and performance.

Oobalink

October 2020 - Match 2021

iOS App Developer (Contract)

Built a fully interactive iOS prototype for streamlining client data acquisition for a major loan originator.

- Designed and implemented the UI with SwiftUI.
- Built interactive data-entry forms and managed local state.
- Implemented on-device data storage solutions.
- Created a proof-of-concept used for stakeholder demonstration.

Funky Chickens

2016 - 2019

Business Operations Manager

Managed sales, marketing, and operations for an organic food retailer.

- Managed invoicing and financial tracking.

- Oversaw stock management and logistics.
- Tracked sales performance and set targets.
- Handled client relations and business development.

TECHNICAL SKILLS

Languages	C++, Flutter, Python, Rust, TypeScript, Svelte
Frameworks	FastAPI, Tauri, React, SvelteKit, Next.js, Tailwind CSS
Tools & Cloud	Docker, Git/GitHub, Linux (Ubuntu), JetBrains IDEs, Firebase, Google Cloud Platform (GCP)

SELECTED PROJECTS

SortPedia: The Interactive Sorting Algorithm Encyclopedia

An interactive encyclopedia for 30+ sorting algorithms, featuring a real-time visualizer, side-by-side racing, and a browser-based performance benchmark engine.

Stack: SvelteKit, Svelte 5 Runes, TypeScript, TailwindCSS, Web Workers, KaTeX

The Flexible Extensible Radar Simulator (Masters)

A comprehensive suite of tools for signal-level radar simulation including a C++23 core and React/Tauri UI.

Stack: C++23, Rust, Tauri, React, TypeScript, CMake

RainVu: Rainfall Logger & Analytics

A modern Flutter app for tracking rainfall data with powerful local-first analytics.

Stack: Flutter, Dart, Riverpod, SQLite, Firebase

EDUCATION

University of Cape Town

2025 - Present

MSc(Eng) Electrical Engineering

Specializing in Radar and Software Engineering. Building the Flexible, Extensible Radar Simulator (FERS).

University of Cape Town

2020 - 2024

BSc(Eng) Electrical and Computer Engineering

Cumulative GPA: 64.7%. Achieved distinctions in Engineering Design (EEE3097S), High Performance Embedded Systems (EEE4120F), Linear Algebra (MAM2084S), and Final Year Project (EEE4022S).

Cambridge AS & IGCSE Level

2016 - 2019

Self-Studied

Aggregate: 82%. Achieved distinctions in Mathematics, Physics, Chemistry, and Computer Science through self-directed study.

INTERESTS

Development

prototyping new ideas, exploring new languages, and code sprints.

Cybersecurity

Interest in digital security protocols, system hardening, and data privacy.

Health & Fitness

Engaging in regular exercise, maintaining a balanced diet, and exploring wellness practices.

Feline Enthusiast

Caretaker of cats.