

Shaun Beaument

SOFTWARE DEVELOPER · ELECTRICAL & COMPUTER ENGINEER



About me

Hard-working student and software developer with a keen interest in low-level computer systems, graphics, and computer engineering. I hone my skills in competitions and numerous projects both personal, public, and collaborative.

Interests

- Problem Solving
- Robust Software Engineering
- Computer Hardware
- High-Performance Systems
- Chess, Hiking & Climbing

Contact

✉ sf.beaument@proton.me
☎ +27 (76) 432 3934
🏠 26 Grotto Road
Rondebosch
Cape Town, SA

Personal

Nationality: UK & South African
Date of birth: 01.01.2005

🐉 SFBdragon

🌐 shaun-beaument

EDUCATION

2023 - 2026 BScEng in Electrical and Computer Engineering

UNIVERSITY OF CAPE TOWN

📍 CAPE TOWN, SOUTH AFRICA

- 86% Cumulative GPA.
- Dissertation in GPU-accelerated ray tracing-based propagation modelling for the FERS radar simulator.

PROFESSIONAL EXPERIENCE

2024 - 2026 Full-stack Rust Software Developer

AFIASSELL - STARTUP

📍 REMOTE, UNITED STATES OF AMERICA

- Redesigned and re-implemented core WebAssembly website component architecture.
- Designed and developed database-to-frontend features for client websites.
- Established and maintained libraries and patterns for cross-language APIs.
- Developed client tooling for server management and website creation.

2022 - 2023 Technical Content Writer

PASSION POSTS

📍 REMOTE, UNITED ARAB EMIRATES

- Delivered technical writing for clients covering a variety of topics for a general audience.
- Researched a variety of consumer and hobby electronics topics, including audio hardware.

2019 - present Paid & Volunteer Computer Assistance, Assembly, and Tutoring

INFORMAL SELF-RUN BUSINESS

📍 MOSSEL BAY & CAPE TOWN, SOUTH AFRICA

COMPETITION EXPERIENCE

2026 Team Captain, HPC System Designer, System Administrator

ISC26 - INTERNATIONAL STUDENT CLUSTER COMPETITION

📍 HAMBURG, GERMANY

- Designed the multimillion rand cluster candidates, worked with it and other HPC systems.
- Managed system setup, configuration, drivers, OS, compilers, MPIs, modulefiles, ASCOT5.
- Lead and managed the team, managed assignments and priorities, worked with sponsors.

2025 Team Captain, HPC System Designer, System Administrator

CHPC NATIONAL STUDENT CLUSTER COMPETITION

📍 CAPE TOWN, SOUTH AFRICA

- My team won the competition, and were selected as the core of the international team.
- Served as the team coordinator, teacher, system designer, system administrator, and carried out the HPL, HPCG, HPCC, ASCOT5, and OpenFOAM application benchmarks.
- Implemented a full fine-tuning and RAG pipeline for Qwen models on HPC docs.

2025 Lead C# Developer, Puzzle Designer, Product Engineer

GMTK GAME JAM 2025

📍 ONLINE, WORLDWIDE

- Produced a complete, unique puzzle game about timing and velocity in 96 hours.
- Drove decision-making, coordinated team tasks and schedules, and managed integration.
- Designed all puzzles along a curve aimed at introducing a new technique or concept each time, while avoiding player frustration through its learning curve.
- Hand-implemented all game logic, including the train interchange and following system.

2024 Team Captain, Reverse Engineering, Cryptography, Attack & Defence

SANREN NATIONAL CYBERSECURITY CHALLENGE

📍 PORT ELIZABETH, SOUTH AFRICA

- #2 overall, prevailing across capture-the-flag categories, additional challenges, and A&D.
- #1 in the Attack & Defence, myself orchestrating automated attack scripts and hardening.
- Personally won the NEC XON student prize and internship.

2021 & 2022 National Maths Olympiad Top 100 (Twice)

SOUTH AFRICAN MATHS FOUNDATION

📍 NATIONWIDE, SOUTH AFRICA

Soft Skills

English	Native
Work Ethic	Strong
Leadership	Practiced
Management	Practiced

Technical Skills

Problem Solving
Computer Programming
Linux & Sysadmin
HPC
Computer Hardware
Low-level Computing
Embedded (STM32/ESP32)
Cybersecurity

Languages and Platforms

Rust
C
C#
x86-64 & Assembly
Verilog / HDL
Python / Bash
C++
GPU

ACADEMIC PROJECTS AND ACHIEVEMENTS

- 2026 **Pipelined Verilog Processor Design & Implementation**
ACADEMIC HPES PROJECT - OWN PROPOSAL BEYOND COURSE SCOPE
Proposed and implemented a fully pipelined custom processor in Verilog, beyond the scope of the course. Includes branch prediction, data hazard mitigation, flush minimisation, and critical path optimisation.
- 2026 **Custom Reliable Transport Protocol Stack, Media Access Control, and GUI**
ACADEMIC DESIGN PROJECT - SUBSYSTEM FOR ANTARCTIC REMOTE DATA EXTRACTION MODULE
Designed, implemented, and tested a custom network stack for long-distance LoRa communication and bulk ESP-NOW transfers at range. Developed a rugged, user-friendly GUI. Designed for low-connectivity and extreme Antarctic conditions.
- 2025 **3rd-year EEE Micromouse Competition**
ACADEMIC DESIGN PROJECT - ROBOTICS DESIGN AND PROBLEM-SOLVING
Won the year-group Micromouse competition among ECE, EE, and MEC 3rd-years. Discarded the course-provided MATLAB stack: implemented maze mapping, navigation, and motor control in C and Zig on an STM32. Only entry to successfully complete the course.
- 2025 **Elected Electrical and Computer Engineering Stream Representative**
ELECTRICAL AND ELECTRONIC ENGINEERING, UCT
Elected as ECE representative: handled decisionmaking, admin, & communication.
- 2023-2025 **Dean's Merit List**
ELECTRICAL AND ELECTRONIC ENGINEERING, UCT
First class aggregate pass each year.

RECENT INDEPENDENT PROJECTS

- 2023 - present **Talc Dynamic Memory Allocator** **1M+ Downloads, 540+ GitHub Stars**
OPEN SOURCE RUST INFRASTRUCTURE - PERSONAL PROJECT  [GITHUB.COM](#), [CRATES.IO](#)
High-performance general-purpose memory allocator for bare-metal and non-standard platforms. Actively maintained.
- 2022 **Digital Logic Design & Implementation of 64-bit RISC-V Processor**
PERSONAL PROJECT - HIGHSCHOOL FORAY INTO COMPUTER ENGINEERING
Built a functional RISC-V processor in a digital logic simulator, including a Brent-Kung carry-lookahead adder and Dadda tree multiplier. Set up C and Rust toolchains, ran algorithms, and verified output. Done independently in high school.

REFERENCES ON REQUEST