

Phoebe Harris

SOFTWARE ENGINEER

✉ root@phoebeharris.xyz  phoebehfharris  Phoebe Harris

Education

University of Bristol

MSc in Computer Science

September 2023 - Ongoing

- Furthered vital knowledge on high-performance computing, computer architecture, machine learning, computer graphics, mathematics, VLSI design, concurrency and networking, and algorithms.
- Developed teamwork skills with a large software development project.
- Produced several high-quality projects including a software renderer, fluid simulator, and distributed Game of Life simulator.

Experience

Software Engineering Intern

Bath, UK

SPARKLAYER

June 2025 - September 2025

- Worked across multiple Golang, PHP, and JavaScript projects in a complex B2B ecommerce service.
- Learned tools and best practises around Google Cloud Platform (GCP).
- Developed a syncing service in Golang to pull data from ERM solutions.

R&D Intern

Bristol, UK

NORDIC SEMICONDUCTOR

June 2026 - September 2026

- Worked upstream with the Zephyr RTOS project to build out support for Nordic offerings.
- Developed key understanding of embedded development practises and hardware standards.
- Researched agentic workflows and wrote up team documentation on AI technology.

Projects

C++ Software Renderer

 phoebehfharris/renderer

September 2025 - December 2025

- Developed a rasteriser and ray-tracer in C++ that rendered 3D scenes.
- Implemented complex graphical features such as phong model rendering, mirrors, shadows, and texture mapping.
- Used modern C++ features and implemented an OBJ file parser.

Medication Tracker wearable

February 2024

- Developed a GTK4+Python app that allows the inputting of recurrent medications.
- Developed a hardware wearable using the Adafruit HUZZAH32 development board, the Arduino tech stack, and C that buzzes when it's time to take a medication.
- Coordinated a team of 3 to complete the project in 24 hours

Mathematical expression compiler

 phoebehfharris/littlecomp

September 2024 - January 2026

- Developed a compiler that turns an abstract syntax tree of mathematical expressions into x86 assembly in Zig.
- Implemented Sethi-Ullman register allocation for efficient memory usage.

High-performance fluid simulator

 phoebehfharris/hpc-fluid

 phoebehfharris/mpi-fluid

September 2025 - July 2026

- Optimised an LBM method fluid simulator and introduced autovectorisation and parallelisation.
- Achieved a roughly 300x speedup over the skeleton code.
- Developed key understanding of HPC technologies like OpenMP, MPI, and SLURM.

- Developed a Discord bot written with Node.js that records Discord messages and file attachments and uploads them to a MongoDB server.
- Developed a web interface using Node, express.js, Angular, and WebSockets to display messages and allow sending messages which the bot will then forward to the server.

Skills

Programming Languages	Rust, C, HTML+CSS, Golang, Java, JavaScript, Lua, Haskell, VHDL, C++
Developer Tools	Git, Emacs, GNU Debugger, make, Linux, Godot, Zephyr RTOS
Libraries	GTK4, React
Soft Skills	Strong communication skills, Excellent at teaching technical topics

Technical Interests

Software	Functional Programming, Linux/UNIX, Open-source development, Computer Graphics, Programming language design, Low-level/systems programming
Hardware	RISC-V, Computer Architecture, Hardware Description Languages