

Harry Newman

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PROFILE

Second-year Computer Science student seeking a software engineering placement from summer 2027, with project experience in C, C++, algorithms, multithreading and web development.

EDUCATION

Aston University Birmingham, UK
Bachelor of Science (BSc Hons) in Computer Science *Sep 2025 – Jun 2029 (Expected)*

- First Year Average Grade: 63% (2:1)
- Selected modules: Introductory Programming for Digital Science (94%); Introductory Mathematics for Digital Science (75.98%)

Walsall College Walsall, UK
Level 4 Higher National Certificate (HNC) in Computing – Merit *Sep 2024 – Jun 2025*

Walsall College Walsall, UK
*Level 3 National Extended Diploma in Computing – D*D*D* *Sep 2022 – Jun 2024*

PROJECTS

soniq | C++, raylib, CMake 2025

- Built a WAV audio player and frequency visualiser with a custom radix-2 Cooley–Tukey FFT, analysing 1,024-sample blocks and synchronising spectrum rendering with playback
- Cached frequency magnitudes on first computation to avoid repeated FFT work for the same audio block, and used single-precision complex values to reduce numerical storage
- Implemented RIFF/WAV chunk parsing and integrated AddressSanitizer and clang-tidy into the CMake build

frctl | C, raylib, CMake 2025

- Built an interactive Mandelbrot, Julia and Newton fractal renderer with mouse-controlled zoom and HSV colour mapping based on iteration counts
- Parallelised computation across 32×32-pixel tiles using POSIX threads and a mutex-protected work queue; recomputed the image only when the view or fractal type changed

wisp | C, CMake 2025

- Built a command-line maze solver with DFS, BFS, Dijkstra and A* search, alongside recursive DFS maze generation and ASCII file input/output
- Implemented a circular queue, stack and binary min-heap for graph traversal, with parent-pointer path reconstruction and preallocated storage for grids up to 100×100 cells

tinyrev | Next.js, Supabase, Vercel 2026

- Built and deployed a personal film, television and game review website using Next.js, Supabase and Vercel, with email/password sign-in, review submission, search and category filtering
- Integrated the OMDb API through a server-side route to retrieve metadata by title or IMDb ID and populate review records in Supabase PostgreSQL

CERTIFICATIONS

Harvard University (via edX): CS50x: Introduction to Computer Science (Jun 2025);
CS50P: Introduction to Programming with Python (May 2025)

TECHNICAL SKILLS

Languages: C, C++, Python, SQL, JavaScript, HTML/CSS
Frameworks and Libraries: Next.js, React, Flask, Tailwind CSS, raylib
Databases and Platforms: PostgreSQL (Supabase), SQLite, Vercel
Developer Tools: Git, CMake, Valgrind