

Sean Parkinson

Software Engineer | Computer Science Student

✉ portfolio@seanparkinson.net 🔗 seanparkinson.net 📍 Sydney, Australia

SUMMARY

Computer Science student with experience building backend systems, simulation tools, and full-stack applications. Interested in distributed systems, high-performance software and QA/E2E testing. Experience in developing to internal tools for industrial planning and RF modeling using Python, C++, .NET, React, and SQL. Seeking a Software Engineering Internship to deepen technical expertise and contribute to production systems.

TECHNICAL SKILLS

Languages: Python, C/C++, C#, Java, TypeScript/JavaScript, SQL

Frameworks/Tools: .NET, React, Node.js, SvelteKit, REST APIs, Docker, Git, Linux

Data & Systems: SQL Server, NumPy/SciPy, Azure, CI/CD, Cloudflare Workers

Interests: Distributed Systems, High-Performance Applications, Compilers/Engines

PROFESSIONAL EXPERIENCE

Industrial Sciences Group (ISG)

07/2025 – Current

Lead Software Engineer (Promoted after 4 Months)

Applied R&D engineering consultancy working with industrial and defence clients.

Advanced Ground-to-Ground RF Propagator

- Built a simulation tool for modeling ground-to-ground RF propagation over terrain, implementing elevation profiles, atmospheric attenuation, and ITU loss models.
- Automated SNR analysis for transmitter/receiver pairs, replacing manual field testing and accelerating planning workflows.
- Integrated geospatial elevation data and produced visual output for network planning use.

Tech: Python, NumPy/SciPy, Geospatial Data Processing

Health Infrastructure Asset Management Assistant

- Built a full-stack application to estimate building service asset requirements using Australian Standards (AS) + AusHFG datasets.
- Designed backend logic for predicting 140+ HVAC, electrical, and fire protection components per facility.
- Replaced spreadsheet workflows with a web application, reducing error risk and improving consistency.

Tech: Python, SvelteKit, SQL, REST APIs, Azure

PROJECTS

Voxel Rendering Engine | Java, OpenGL

- Building a modern voxel rendering engine on legacy Java 1.6 and LWJGL 2.9.3, with a focus on being multi-threaded first, reducing memory footprint and doubling frame rate.
- Developed lock-free, thread-safe memory structures and asynchronous job queues to fully parallelise mesh generation and geometry processing.
- Applied low-level memory optimizations, including binary greedy meshing, array flattening and bitwise manipulation, to reduce GC pressure and improve frame-time consistency.

TeamTrack | .NET, React, SQL

- Building a full-stack time tracking tool with role-based authentication (contractor/manager).
- Designing REST APIs and relational schema to support time logs, breaks, and project-level reporting.

- Backend-first architecture targeting a minimal deployable MVP.

EDUCATION

Bachelor of Computer Science (Honours)

University of Technology, Sydney

02/2024 – Present

Expected 2027

Bachelor of Electrical Engineering (Honours) and Science (Computer Science)

University of New South Wales

02/2023 – 11/2023

Transferred to UTS to focus on software development.

REFERENCES

Mark Yeo, *Algorithms Engineer*, DroneShield

Referee details available upon request.