Sean Parkinson

portfolio@seanparkinson.net | seanparkinson.net | Sydney, Australia

Education

Bachelor of Computer Science (Honours) Feb 2024 – Present
University of Technology, Sydney Expected 2027

Experience

Industrial Sciences Group (ISG) Jul 2025 – Present
Software Engineer

- Built production systems for industrial and defence clients, including RF simulation tools, asset prediction pipelines, and full-stack planning applications
- Building a data pipeline processing 30,000+ asset records, applying statistical clustering to automate asset classification and maintenance pricing, replacing manual estimation workflows
- Developed a full-stack application predicting 140+ building service asset requirements per facility using Australian Standards datasets, eliminating spreadsheet-based workflows and improving planning efficiency
- Engineered a ground-to-ground RF propagation simulator using ITU loss models and geospatial elevation data, automating SNR analysis and replacing manual field testing in network planning workflows

Tech: Python, SQL, Azure, NumPy/SciPy, SvelteKit, REST APIs

Projects

Voxel Rendering Engine | Java, OpenGL

- Built a multi-threaded voxel rendering engine in Java, doubling frame rate through parallel mesh generation, lock-free data structures, and low-level memory optimisations
- Implementing a GPU-driven indirect rendering pipeline using compute shader frustum culling, eliminating CPU-GPU synchronisation bottlenecks and reducing per-frame draw overhead
- Built custom JNI bindings for IMGUI on legacy Java (1.6, LWJGL 2.9.3), implementing a native interop layer from scratch due to lack of library support

TeamTrack | .NET, React, SQL

- Developing a full-stack time tracking system with role-based access control, supporting time logs, break tracking, and project-level reporting via REST APIs
- Backend-first architecture targeting a minimal deployable MVP

Technical Skills

Languages: C/C++, Java, Python, C#, TypeScript, SQL
Frameworks/Tools: .NET, React, Node.js, SvelteKit, REST APIs, Docker, Git, Linux
Data & Systems: SQL Server, NumPy/SciPy, Azure, CI/CD, Cloudflare Workers