

# NEO HYLDELUND

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## EDUCATION

### Simon Fraser University

*Bachelor of Science in Computing Science*

Data Structures & Algorithms, Software Engineering, AI & Machine Learning

Burnaby, BC

*Expected Fall 2028*

## EXPERIENCE

### Webb Electronics | Software Developer, Co-op | Burnaby, BC

Sept. 2025 - Present

- Implemented critical firmware features for a next-generation product, contributing significantly to its early development.
- Refactored and optimized C-based firmware on STM32 boards to improve memory efficiency, stability, and maintainability in a multithreaded environment.
- Collaborated closely with hardware engineers to debug low-level system interactions, gaining deep experience with embedded systems and hardware-software integration.

## PROJECTS

### Personal Portfolio | [GitHub](#) | [Website](#) | NextJS / TypeScript / TailwindCSS / ThreeJS

Jun. 2025 - Aug. 2025

Clean, mobile-optimized personal site showcasing projects and code samples.

- Increased user engagement by ~40% by integrating interactive 3D elements using Three.js and React Three Fiber to create an immersive landing experience.
- Improved performance by reducing 3D asset size by 40% through custom shader optimization and geometry simplification.
- Accelerated build time by 60% by implementing dynamic imports and static route generation in Next.js, streamlining deployment and dev workflows.

### Model Renderer | [GitHub](#) | C++ / OpenGL / GLM / GLTF / A\* / JSON

Jul. 2025 - Present

Created an original rendering engine with fully integrated movement and pathfinding

- Developed a custom rendering engine from the ground up, json parsing, model loading, and camera controls.
- Optimized OpenGL draw calls and implemented batch rendering, reducing frame time variance by 32%, which significantly improved overall smoothness and responsiveness.
- Built a glTF mesh loader using nlohmann::json, enabling support for 30+ unique textured assets with efficient handling of transformations, materials, and buffers.

### Hands-Off | [GitHub](#) | Python / Faster-Whisper / Porcupine / Spotipy

Jul. - Aug. 2025

Designed a privacy-first voice assistant using real-time transcription and voice command recognition.

- Enabled 100% hands-free music control via wake word and Faster-Whisper command parsing.
- Deployed hybrid async pipeline for <250ms voice response latency.
- Supported 10+ voice intents including playback, playlist switching, and volume control.

### Grow-the-Hoard | [GitHub](#) | Java / Maven / OpenGL / LDTk / JUnit

Jan. - Mar. 2025

Collaborated in a team of 4 to develop a top-down maze game with intelligent enemy behavior.

- Wrote core logic and pathfinding using A\* on custom level formats (LDTk).
- Achieved 100% unit test coverage with JaCoCo; CI-tested using GitHub Actions.
- Presented to a class of 80+ with live gameplay demo and source code walkthrough.

## TECHNICAL SKILLS

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

**Frameworks & Libraries:** React, Next.js, Node.js, Express, TailwindCSS

**Tools:** Git, Postman, JIRA, VS Code, STM32CubeIDE, GDB, Oscilloscope

**Concepts:** Asynchronous programming, API integration, performance profiling, multithreading, memory management, embedded systems, real-time programming, hardware-software integration, firmware optimization

