Lucas Thiessen

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Education

University of Waterloo — **September 2020 – April 2025**
Bachelor of Applied Science in Computer Engineering

Experience

Software Developer | Mikobyte Solutions — **January 2024 – December 2024**

- Developed a chat feature in **C++** using the **ChatGPT API**, enabling tenants to ask questions about their building
- Implemented custom document chunking and message content generation to improve response accuracy and relevance
- Designed and implemented algorithmic solutions in **C++** across multiple projects, optimizing performance and solving complex client problems

Software Engineer | AlertDriving — **January 2023 – April 2023**

- Led a team tasked with implementing modern encryption for password storage in an **SQL** database, improving data security and reducing vulnerabilities by 40%
- Implemented over 50 features and bug fixes in collaboration with cross-functional teams using **PHP**, **JavaScript**, **SQL**, **HTML**, and **CSS**, enhancing application performance and user experience

Back-End Software Developer | Year Zero Studios — **May 2022 – August 2022**

- Developed a quiz-building application from scratch using **React**, **Next.js**, **Firestore**, and **Material UI**, delivering a seamless, responsive user experience
- Enhanced functionality and performance across multiple Year Zero Studios websites by designing and implementing features and bug fixes for over 5 active projects using **Figma**, **Git**, **Firestore**, and **Heroku**

Computing Assistant | University of Waterloo — **September 2021 – December 2021**

- Built a mobile-responsive version of the Faculty of Arts asset management website using **PHP**, **HTML**, and **JavaScript**, improving accessibility and overall user experience
- Maintained the Faculty of Arts applications and asset management website, resolving over 30 issues to ensure smooth operation and system stability

Projects

CargoBuddy: Advanced Autonomous Cargo Delivery System, C — **May 2024**

- Developed CargoBuddy, an autonomous robotic system designed to transport items independently within storage facilities, improving operational efficiency
- Engineered an autonomous system using **LiDAR**, **ultrasonic sensors**, and a **Raspberry Pi**, optimizing path planning algorithms in **C++** for precise navigation

Real-Time Operating System, C — **September 2023**

- Designed and implemented a first-fit memory management system, optimizing allocation efficiency and reducing fragmentation
- Developed a priority-based kernel with min-heap scheduling and aging techniques, improving task prioritization and response times.
- Implemented inter-task communication enabling seamless coordination between tasks and devices.

Skills

Programming Languages: C++/C, Java, Kotlin, Python, Verilog, VHDL, RISC-V, PHP, SQL, JavaScript, HTML/CSS
Tools: UNIX/Linux, Git, Vim, PuTTY, FPGA, Visual Studio, Android Studio, Firestore, Figma, Heroku, MongoDb Atlas
Libraries/Frameworks: Bootstrap, Express, Laravel, Next.js, Material UI, Node.js, Pygame, React, Requests