

Spencer Kelly

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EDUCATION

Wilfrid Laurier University
Bachelor of Science in Computer Science

Waterloo, Ontario | Sept 2023 – Present

EXPERIENCE

Laurier Computing Society Club

Waterloo, Ontario | Sept 2025 – Present

Software Engineer

- Develop and maintain the club's ScheduleApp, a **full-stack MERN** application utilizing React, Node.js, and MongoDB to solve the overhead associated with applicant tracking and interview scheduling for **100+ members**.
- Contribute to open-source development on GitHub within a **9 member Agile team** environment by participating in code reviews, managing PRs/issues, and consistently writing clean, well documented TypeScript code.
- Collaborate with a team of software developers to deliver production ready features and improve project scalability.

Super Sucker Hydro Vac Service Inc.

Hamilton, Ontario | April 2025 – Aug 2025

Mobile Parts and Inventory

- Optimized **5+ daily delivery routes** across the Greater Toronto Area to ensure timely transport of critical parts.
- Managed and maintained **\$500K+ in inventory across 7 satellite yards**, performing regular audits to reduce stock discrepancies, improve part accuracy, and support consistent field operations.
- Coordinated with **10+ supervisors and technicians** to fulfill real-time inventory requests, **reducing equipment downtime by 15%** while improving workflow efficiency and communication across multiple field teams.

Ox-Fleet Care

Hamilton, Ontario | May 2024 – Aug 2024

Yard Cleaner

- Streamlined yard maintenance by reorganizing workflows, **achieving a 50% reduction** in overall completion time.
- Applied proactive problem-solving and continuous monitoring to maintain optimal yard conditions.

PROJECTS

Bird Watch

React, TypeScript, Tailwind, Node.js, Express, Python, NLTK, VADER Sentiment Analysis

Reddit Sentiment Analyzer

- Developed a full-stack MERN and Python application that analyzed **1,000+ Reddit posts** to help students identify “bird courses,” applying NLP models to extract meaningful patterns and insights on course difficulty.
- Developed a **Node.js/Express RESTful API** to interface with the Reddit API, optimizing request handling and data parsing to **improve fetch performance by 30%** and support real-time updates across multiple query parameters.
- Built a **Python NLP pipeline using NLTK and VADER Sentiment Analysis** to clean, process, and classify textual data with **85% sentiment accuracy**, transforming unstructured Reddit content into actionable analytics.
- Designed and implemented a responsive, user-friendly frontend with **React, TypeScript, and Tailwind CSS**, enabling users to visualize complex course analysis and sentiment scores through a clean UI.

skos

C, Assembly (NASM), GRUB, QEMU

Bare-bones Operating System Kernel

- Developed a functional operating system kernel from scratch in **C and Assembly**, successfully booted through **GRUB** and tested in **QEMU** to establish a stable low-level computing environment.
- Engineered robust **interrupt handling, GDT/IDT configuration**, and a **programmable timer driver** that improved kernel stability, **reduced hardware response latency by 30%**, and enabled precise task scheduling during runtime.
- Implemented a fully operational **FAT32 file system** and **ATA/IDE disk driver**, enabling seamless file operations and supporting multi-sector read/write functionality, which enhanced disk I/O reliability across extended test cycles.

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, C, Assembly, Java, HTML5, CSS3, Mark Down, VBA, SQL, Bash

Frameworks: React, Next.js, Node.js, Express.js, FastAPI, Tailwind CSS, Flask, Vite

Data & DevOps: MongoDB, PostgreSQL, Redis, SQLite, Azure, Vercel, Render, Nginx, AWS, Pandas

Tools & Libraries: Git, GitHub, Linux, QEMU, PyTorch, TensorFlow, JWT, PNPM, VS Code, Docker

PERSONAL INTERESTS

Interested in manga, gaming, and music, with strong enthusiasm for computer hardware, home servers, and investing.