Kalista Singh

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Education

University of Alberta · **Edmonton, Alberta**
B.S in Computer Science Honors · *2023 - Present*

Relevant Coursework: Algorithms I, Practical Programming Methodology, Introduction to file and Database Management, Computer Organization and Architecture I, Machine Learning I, Formal Systems and Logic, Introduction to Software Engineering.

Skills

Languages & Tools: Python, C, Java, JavaScript, TypeScript, SQL, MySQL, MongoDB, Firebase, HTML/CSS, React, Next.js, Vite, SCSS, Tkinter, Figma, Git/GitHub

Soft skills: Critical thinking, Problem solving, Communication, Teamwork, Multitasking, Multitasking

Work Experiences

Software co-lead · **Edmonton, Alberta**
Mission SpaceWalker · *9/2024 - present*

- Co-lead software development for a cyanobacteria bioreactor project as a part of the Canadian Reduced Gravity Experiment Design Challenge (CAN-RGX).
- Engineered a python/Tkinter dashboard display live camera feed, minute sensor data and control hardware.
- Programmed and tested embedded software for sensors and system components, ensuring accurate data capture and performance.
- Oversee smooth integration of software with hardware systems.

Web developer co-lead · **Edmonton, Alberta**
Mission spaceWalker · *9/2024 - present*

- Developed responsive front-end interfaces using React, Typescript, and CSS, improving project outreach and engagement.
- Designed website layouts and user flows in Figma.
- Integrated deployment workflows with GitHub Pages/Vercel.

Web developer associate · **Edmonton, Alberta**
NAT - Network for Applied Technology · *12/2024 - 5/2025*

- Built **frontend features** and contributed to full-stack development with Next.js, React, TypeScript, and SCSS.
- Collaborated with cross-functional teams to design and deploy scalable, responsive websites.

Curriculum Specialist · **Edmonton, Alberta**
The Fred Ottto DiscoverE program · *9/2025 - present*

- Applied computational thinking and problem-solving skills to develop innovative, interactive hands-on coding/engineering projects that introduces youth to computer science, engineering, and technology concepts.
- Collaborated with a multidisciplinary team to create, test, and optimize educational content.

Instructor · **Edmonton, Alberta**
The Fred Ottto DiscoverE program · *5/2025 - 8/2025*

- Delivered STEM summer camps introducing youth to coding, robotics, and engineering concepts.
- Promoted engagement in CS and technology through interactive, project-based learning.

Projects

3D Renderer (Ray Tracer) | *C*

- Built a 3D renderer from scratch in C, implementing ray tracing, semi-realistic lighting, shadows, and anti-aliasing.
- Developed custom vector math and geometry libraries, optimized sphere intersection algorithms, and managed memory efficiently.
- Generated high-quality PPM image outputs, applying computational geometry and algorithmic optimization.

Tweet Management System - *Python, MongoDB*

- Designed and developed a MongoDB-based data management system to search, and analyze large tweet datasets with batch JSON processing and real-time querying.
- Implemented aggregation pipelines to identify top users by followers and top tweets by engagement, optimizing performance for scalability.
- Contributed to modular Python backend development and co-authored project documentation, ensuring clarity, maintainability, and team collaboration.

Personal website - *React, TypeScript, Vite, SCSS*

- Designed and developed a responsive portfolio site using React, TypeScript, and Vite with SCSS modules for modular styling and reusable components.
- Showcased skills in frontend development, UI/UX design, and modern web tooling, integrating interactive sections and preparing deployment to GitHub Pages/Vercel.