# Jakob Sereda

(587) 575-3636 | jakobsereda@gmail.com | linkedin.com/in/jakobsereda | github.com/jakobsereda

## Technical Skills

**Languages**: C/C++, Rust, Java, JavaScript/TypeScript, HTML/CSS, Python, Bash
**Frameworks and Libraries**: SystemC, React, Svelte, Node.js, Flask, JUnit
**Tools**: Git, Make, GDB, Linux, Yocto, Vim/Neovim, VS Code, Cargo, Docker, Github Actions, PostgreSQL, Jira

## Education

**University of British Columbia** Sep. 2023 – May 2028
*Bachelor of Science, Major in Computer Science (Co-op Program)* *Vancouver, BC*

## Experience

**System Simulation Engineering Co-op** Sep. 2025 – Present
*Intel* *Vancouver, BC*

- Developed an executable software model using C++ with SystemC that simulates IP and SOC hardware to enable architectural exploration and pre-silicon firmware development ahead of hardware availability
- Optimized and extended a Python and Jinja based register generation framework to automatically produce 150+ SystemC register files (3,000+ registers) from IP-XACT definitions, enhancing scalability and ensuring consistency

**Embedded Linux Developer** Sep. 2025 – Present
*UBC Formula Electric* *Vancouver, BC*

- Developed a custom embedded Linux distribution using Yocto for the in-vehicle dashboard system, enabling smooth deployment and optimized runtime performance
- Designed and developed embedded firmware in C/C++ for vehicle telemetry systems

**Software Engineer Intern** May 2024 – Aug. 2025
*Credivera* *Calgary, AB*

- Improved accuracy and volume of client outreach emails by 200% through various Python scripts performing web scraping and data collection (pandas, Beautiful Soup)
- Contributed to 100+ product improvements and features for the Credivera web app using React, SQL, and REST APIs, spanning UI design, backend logic, and integration testing
- Collaborated in Agile sprints using Jira and served as scrum master for multiple iterations, coordinating development efforts and ensuring on-time feature delivery

**Undergraduate Teaching Assistant** Sep. 2024 – Dec. 2024
*University of British Columbia* *Vancouver, BC*

- Personally mentored over 40 students as a lab TA for CPSC 210, Software Construction
- Taught students object-oriented programming concepts in Java through hands-on lab exercises and code reviews

## Projects

**8-Bit CPU** | *Breadboarding, Soldering, Computer Architecture* Feb. 2025 - Present

- Building an 8-Bit CPU that supports 16 instructions using breadboards and ICs
- Worked hands-on designing logic with common ICs such as the 555 Timer for practical applications
- Planning to extend the processor to support more instructions, interact with external devices, and allow for pipelined execution

**Weisbecker** | *Rust, SDL* Jun. 2024 – Aug. 2024

- Built an interpreter for the CHIP-8 programming language using Rust
- Parsed command line arguments for the project using Clap, allowing specification of a custom tick rate and ROM
- Implemented requirements laid out in public specifications for the virtual machine, including graphical output (SDL) and all 35 opcodes

## Achievements

**Winner - 2024 Truro NASA Space Apps Challenge** Oct. 2024
*NASA* *Truro, NS*

- Built an application to promote movement in low-gravity environments, which became a 2024 Global Nominee
- Used OpenCV and Python to track and analyze human movements, computing a score based on limb position
- Used a Raspberry Pi 4 along with C++ to deliver a compact and robust real-time application