

# Jakob Sereda

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## TECHNICAL SKILLS

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**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

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**University of British Columbia**

Sep. 2023 – May 2028

*Bachelor of Science, Major in Computer Science (Co-op Program)*

*Vancouver, BC*

## EXPERIENCE

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**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
- 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
- Designed and implemented a SystemC module that modeled a coherent MMIO controller for an x86 CPU cluster, accelerating firmware development by one month and enabling early integration testing

**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
- Created and customized Yocto layers, build trees, and configuration files to support a Flutter-based UI stack on the STM32MP1 platform
- Built a minimal Raspberry Pi OS image for a Pi Zero by stripping unnecessary services and tuning boot configurations to stream high-frequency sensor data to an external model used in the vehicle controls algorithm

**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, BeautifulSoup)
- 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

**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

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**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