

Marko Jevtic

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Education

University of Guelph – B.Eng. in Computer Engineering (Co-op)

Expected May 2028

Experience

Hardware Engineering Co-op, Biswas Soil Lab, University of Guelph – Guelph, Ontario **Jan. 2026 – Aug. 2026**

- Designed a fused power path supporting LiPo USB charging and hot-swappable Li-ion packs for SBCs and SoM carriers, featuring protection against ESD, reverse polarity and overcurrent using fuses, diodes and MOSFETs
- Iterated 5 revisions of a SoM carrier board with MIPI ports for a touch display and camera, utilizing differential pair routing and impedance matching to enable high-speed serial communication at speeds up to 1.5 Gbps per lane
- Designed an RP2350A LED controller PCB powered and controlled over USB-C from a phone, tuning lighting conditions for ML models by adjusting PWM duty with a mobile app; met trained ML model lighting requirements (590-610 lux)
- Communicated sensor data formats and hardware interfaces with software colleagues, minimizing revisions and enabling easy component integration; formally documented progress to funding agencies using test matrices

Part-Time Student Engineer, Biswas Soil Lab, University of Guelph – Guelph, Ontario **Sept. 2025 – Jan. 2026**

- Created a development board PCB for interfacing an analog soil moisture sensor with a RAK3172 chip, resulting in a successful analog-to-digital conversion and LoRa communication protocol testing
- Engineered a 3D-printed stand for a handheld FTIR sensor using SolidWorks, increasing stability and ergonomics

Hardware Engineering Co-op, Biswas Soil Lab, University of Guelph – Guelph, Ontario **May 2025 – Aug. 2025**

- Developed 3 PCBs that interface a spectrometer, environmental sensors, and a microcontroller with a single board computer, enabling communication over I²C, SPI & UART and analog-to-digital conversion
- Simulated and designed analog capacitive soil moisture circuits using LTspice and MATLAB featuring high frequency oscillation, filters, and amplifiers, resulting in over 90% cost reduction compared to industry units

Projects

Linux Mini PC **Feb. 2026 – Sept. 2026**

- Designed a 4-layer CM5 carrier board with USB 3.0 and 4-lane MIPI CSI & DSI, routing 90 Ω and 100 Ω impedance controlled pairs; verified SuperSpeed enumeration as well as camera & display operation (markoj.ca)
- Integrated single cell LiPo battery power system with BQ25895, supporting USB-C charging and battery voltage monitoring over I²C while holding board surface temperature under 50°C while charging

HDMI to CSI Adapter **Apr. 2026 – May 2026**

- Designed a 4-layer HDMI-to-MIPI CSI adapter PCB around the Toshiba TC358743, routing impedance matched and ESD protected differential pairs for speeds rated at 1 Gbps per lane (4 lanes, tested with PiKVM software on markoj.ca)

RP2354A Minima Board Family **Feb. 2026 – Apr. 2026**

- Engineered a 3×2 cm 4-layer RP2354A dev board and a detachable 40 pin GPIO extension board, allowing swappable breakout boards for each MCU board; verified the functionality of GPIO 0-29, 3V3, 5V and GND pins (markoj.ca)

RP2350A USB-C Development Board **June 2025 – Aug. 2025**

- Created a 2-layer dev board PCB, interfacing an oscillator, flash chip and regulator with an RP2350A microcontroller, with GPIOs 1-29, 3V3 and GND pins broken out, validated ADC, I²C, SPI, UART, DMA, and dual-core operation

Skills

Software: Altium Designer, SolidWorks (CSWA), LTspice, Linux CLI, Bambu Studio, Android Studio, AMD Vivado

Lab & Assembly: SMD and reflow soldering, heat guns, oscilloscopes, function generators, bench PSUs, multimeters

Interfacing: I²C, SPI, UART, USB 3.0, MIPI CSI & DSI, USB 2.0, I²S, SDI-12, LoRaWAN, Bluetooth 5.0, WiFi

Programming: MATLAB, C, C++, Python, Java, VHDL, Kotlin, Jetpack Compose, Zephyr RTOS, Arduino