GABRIEL GAGNÉ

Lévis, Québec, Canada

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EDUCATION

Université Laval QC, Canada
Master's in Electrical Engineering (GPA: 4.00 / 4.33.) May 2023 – Dec 2024
- **Courses**: Computer Vision, Algorithmic Photography, FPGA Systems Design, Mixed Signal Microelectronics
- **Thesis**: Neural Network Implementation and Optimization on Edge Devices

Université Laval QC, Canada
Bachelor's (Hons.) in Electrical Engineering (GPA: 4.09 / 4.33.) Sep 2019 – Apr 2023
- **Courses**: Advanced Programming in C++, Microprocessor Systems and Interfaces, Communications Systems, Control Systems, Digital Signal Processing

WORK EXPERIENCE

Smartek Technologies Breakeyville, QC, Canada
Embedded Software Developer Oct 2020 – Dec 2023
- Developed a cutting-edge ultrasonic inspection device leveraging tight integration between an FPGA and Smartrek's RF technology. The main focus was put on ensuring a fully remotely configurable and operable device, as well as edge processing.
- Increased the amount of free flash memory by up to 50% on our microcontroller by porting custom libraries to a modern compiler.
- Significantly improved flexibility and reliability of internal production tools by re-designing from the ground up the tools' software architecture.
- Contributed to the integration of over 4 new sensor types into Smartrek's product stack, including hardware revision, firmware code, Android app and Web app development.

SiFi Labs Québec, QC, Canada
Master's Research Intern May 2023 – Sep 2023
- Developed an end-to-end machine learning pipeline, including signal processing, feature extraction from datasets or from real-time SiFi device data, saving the processed data, training a ML model and inferring.
- Developed a fully cross-platform command-line tool in Rust that can interact with all of SiFi Labs' devices. This tool propels forward the development and experimentation capabilities of researchers and developers. Python wrappers and JNI bindings were also created to use the tool from other languages.
- Provided DevOps insight, notably for documentation and version control, by restructuring many repositories, writing clear documentation (code, readmes, user's guides), and automatisation scripts.

Université Laval Québec, QC, Canada
FPGA Research Intern May 2021 – Aug 2021
- Designed an SoC FPGA-based development board with all the interfaces needed by the lab's graduate students, including Ethernet, USB and DDR3L.

Université Laval Québec, QC, Canada
Class Assistant May 2021 – Dec 2023
- Provided assistance in 4 courses since 2021 by correcting students' lab reports and troubleshooting classes.

HONORS & AWARDS

Electrical Engineering Academic Award QC, Canada
Issued by *Department of Electrical and Computer Engineering* Apr 2023
- EE and CE Department gives this prize to the student with the best academic results in their cohort

First Place of the Design III Competition QC, Canada
Issued by *Université Laval* Apr 2022
- A self-driving robot had to be designed in multidisciplinary teams of 12 students in Software, Computer and Electrical Engineering

SKILLS, LANGUAGES, INTERESTS

- **Languages**: French (Native speaker), English (Fluent), Spanish (Basic)
- **Soft Skills**: Communication, Informative Writing, Technical Writing, Critical Thinking, Leadership
- **Programming**: C/C++, Rust, Java, Python, PostgreSQL, Shell scripting, HTML, Typescript
- **Tools**: Microsoft Office, Git, Docker, AWS, Unix tools
- **Interests**: Endurance running, road cycling, story-driven video games, learning new skills, having thoughtful conversations, philosophy, reading