Miguel Menard

Computer Engineering Student

Avid interest in Embedded Firmware and Artificial Intelligence

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Available in July 2025 for 12 Months

migies12.github.io

TECHNICAL SKILLS

Computer

Python, JavaScript, C, C#, C++, Java, VHDL, Assembly, R, HTML, Liquid, CSS, Linux/WSL/ Windows/Mac OSX, Perl, Tk, Bash

Software

Git Hub/Bitbucket, Anaconda, Eclipse, Atlassian, Modelsim and Quartus II, MongoDB, Jenkins, SVN, Docker, NPM

EDUCATION

University of British Columbia   **Expected 2027**

Bachelor of Applied Science - Computer Engineering

Champlain Regional College
2020-2022 Diploma of Collegiate Studies – Pure and Applied Sciences

TECHNICAL WORK EXPERIENCE

Matrox Video FPGA Department   **May 2024 (4 months)**
Software Engineering Intern

- Developed a streamlined branching methodology for FPGA workflows using SVN.
- Built a Python/Perl Tkinter GUI to automate and multithread branch creation for releases, bug fixes, and features.

Felix and Paul Studios   **May 2023 (4 months)**
Computer Engineering Intern

- Created an automated testing platform that allowed developers to automate low end hardware scripts, as well as higher end python command scripts simultaneously. Used for Felix and Paul's lunar video acquisition module in harsh automated tests.
- Developed in python with key libraries such as QT, FastAPI and Yamcs. Implemented using an API that facilitated seamless external control of the camera control panel, allowing it to be controlled by other scripts.

OnTheSpot Inc.   **2022 – 2024 (2.5 yrs)**
Co-Founder

- Founder of OnTheSpot; made to allow an all in one experience in private villas all around the world.
- Acted as the lead developer where I learned to make executive business decisions, and rely on my critical judgment to solve evolving problems in many areas.
- Created 3 websites over the span of 3 years due to integration issues and entrepreneurial pivots.

LMP INC. Montreal, Quebec   **May 2021 (4 months)**
IT Assistant Deployment and Inventory

- Created and inventory management system with barcodes for CO_2, eco friendly refrigeration parts. Allowed factory workers to keep track of lost parts and other factory problems in a systematic way.

TECHNICAL PROJECTS

<u>OS161</u>, Vancouver B-C   **Autumn 2024**

- Implemented OS161 as part of Harvard's CS161 curriculum in C.

- Developed synchronization primitives, including <u>locks</u>, <u>semaphores</u>, and <u>condition variables</u>.
- Built a <u>filesystem</u> and implemented system calls like <u>open</u>, <u>close</u>, <u>seek</u>, and more.
- Designed process control with <u>PID management</u>, enabling <u>fork</u>, <u>execv</u>, <u>waitpid</u>, and <u>exit</u> system calls.
- Creating a custom virtual memory system for address space management, <u>memory virtualization</u>, and abstraction.

5-Step Risk Processor, Vancouver B-C   **Autumn 2023**

- Designed and implemented a 5-stage RISC processor in SystemVerilog.
- Built a pipelined architecture with stages for instruction fetch, decode, execution, memory access, and writeback.
- Developed components including ALU operations, registers, shifters, and a CPU state machine.
- Connected Verilog modules to create a complete datapath for efficient instruction processing.

NWHacks Hackathon, Vancouver B-C   **March 2023**

- Deployed "ImgGuessr"; a game where you get an abstract image made by AI and must guess what it is meant to represent.

AWARDS, VOLUNTEERING AND LEADERSHIP

UBC EUS Director of E^0, UBC	**2024**
UBC ECESS Social Coordinator, UBC	**2023-2025**
UBC Sigma Phi Delta VP Finance, UBC	**2023-2024**
UBC EUS Volunteer, Vancouver, UBC	**2023-Now**
Boy Scouts Canada, St-Bruno, Quebec "Pack" Leader	**2009-2017**
Héma Quebec Blood Bank Organization, St-Bruno, Quebec	**2018**

INTERESTS & ACTIVITIES

- Fascinated by the **human body** and the implications of **AI**
- Swimming, Diving, Snowboarding, Basketball, Hiking/Trekking, Sports, Running
- I am a strong follower of **Web 3.0** - NFT's, crypto-currencies and the metaverse in particular
- Coding, gaming, board games and **strategy games** (Magic: The Gathering)