

Samuel Careau

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🌐 hollow-earth in samuel-careau 🇨🇦 Canadian 🏠 Fully vaccinated

EDUCATION

Sep 2020 – May 2023
Montreal, Canada **B.Sc. Physics, McGill University**
Various chemistry electives
Partial computer science minor completed

Aug 2018 – May 2020
Quebec City, Canada **DEC Pure and Applied Sciences, CEGEP Champlain St-Lawrence**

PROFESSIONAL EXPERIENCE

Jul 2022 – present
Quebec City, Canada **Pension Buyback Technician, Ministère de la Cybersécurité et du Numérique** [🔗](#)
• Financial data manipulation and data entry
• Task automation with Python (PyPDF4, OCR)

May 2020 – Jun 2021
Quebec City, Canada **Support Technician, Crobel/Batteries Expert** [🔗](#)
• Car charger installations, car battery changes, battery installation in offgrid RVs
• Custom battery pack building/repair/maintenance, custom electronic repairs
• Solar energy setups from scratch (200W-2000W), industrial cabling

SKILLS

Electronics

Circuit design and assembly, industrial and residential cabling, solar projects setup, Arduino and microcontrollers. Digital gates, digital/analog control, KiCad.

Programming

Python (TensorFlow, Numpy, opencv2, scipy, Flask, Django), Rust, Java, C++ (Vulkan, OpenGL) make, C#, Unity, HTML, cmake, sqlite3/MySQL, ffmpeg

RESEARCH

Sep 2022 – Jan 2023
Montreal, Canada **ALBATROS, Supervisor H. Cynthia Chiang** [🔗](#)
• Used electronics skills to modify a Starlink RV unit to work on DC and bypass the router
• Set up an error detection algorithm across a large range of frequencies and polarizations [🔗](#)

PROJECTS

McHacks 2023 - Montreal Hackathon, Musclee

- Developed a workout tracking app over 24 hours using Flask, Sqlite3, HTML, Python, and CSS.
- Solved CSE's *crackme* challenge.

Scandium

[🔗](#)

A fully self-written in-development game engine relying solely on GML, Vulkan, and C++.

Handwritten LaTeX

[🔗](#)

A personal project which leverages machine learning and image recognition to transform my handwriting to LaTeX code. Uses Numpy, TensorFlow, and opencv2.

Chaosball - McGameJam 2021

[🔗](#)

Singleplayer 3D action game developed for the McGill Game Jam 2021 in 45 hours. Won 3rd place.

Solar power

Custom modular 500W solar-powered sonar for the Coast Guard, 1500W solar offgrid setup for a customer's cottage (approx. 160 Ah of batteries along with cabling, protection equipment, etc.)

Home lab

Set up a NAS on a LAN network along with a OpenVPN to access the LAN network securely from the outside. Added a Raspberry Pi to act as a local DNS along with Pi-hole. Added a remote server with WoL functionality running Ubuntu server edition. Worked with multiple VPS in order to set up services for games, Mediawiki and syncing files across devices.

LANGUAGES

French
Native

English
Native

Russian
Basic

COURSES

Computer Science - 208 (Prog. for Eng. and Phys. Sci.) | 250 (Intro. to Comp. Sci. [Java]) | 273 (Intro. to Computer Systems [Assembly/MIPS]) | 322 (Intro to C++ [C++]) | 557 (Computer Graphics [C++])

Physics - 328 (Electronics) | 432 (Physics of Fluids) | 534 (Nanotechnology) | 521 (Astrophysics)

Chemistry - 204 (Physical Chemistry) | 212 (Organic Chemistry I)