Samuel Careau

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hollow-earth | hollow-earth | samuel-careau | Canadian

EDUCATION

Aug 2020 – Jun 2023
Montreal, Canada

B.Sc. Physics, *McGill University*
Statistics, data visualization, Python programming, data science, computer science

Aug 2018 – Jun 2020
Quebec City, Canada

DEC Pure and Applied Sciences, *CEGEP Champlain Regional College, Campus 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
- Improved productivity by automating tasks using Python (PyPDF4, OCR)

Sep 2022 – Jan 2023
Montreal, Canada

Undergraduate Researcher, *ALBATROS @ McGill*
- Cosmology research with ALBATROS (Supervisor: H. Cynthia Chiang)
- Set up an error detection algorithm with Python across a range of frequencies and polarizations
- Diagnostics and hardware monitoring with Python
- Used electronics skills to modify a Starlink RV unit to work on DC and bypass the router

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

Information Technologies (IT)
Python (TensorFlow, Numpy, opencv2, scipy, Flask, Matplotlib), C++ (Vulkan, OpenGL), Java, Rust, HTML, CSS, make, cmake, MySQL, C#, Unity, ffmpeg, data algorithms, Scrum and Agile methodologies

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

PROJECTS

McHacks 2023 - Montreal Hackathon, *Musclee*
- Developped a workout tracking app over 24 hours using Python and sqlite3 for back-end, and HTML, CSS, and Flask for front-end.
- Solved the Canadian Communications Security Establishment's *crackme* challenge.

Scandium
A fully self-written game engine relying solely on GML, Vulkan, and C++. Can render objects and individual vertices.

Handwritten LaTeX
A personal project which leverages machine learning and computer vision to translate my handwriting into LaTeX code. Uses Numpy, TensorFlow, Tkinter, 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

COURSES

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

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

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