Marc-André Vigneault

Junior Engineer & M.Sc

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Programming

	Level	Experience
Python	●●●●◐	9y.
C	●●●○○	2y.
MATLAB	●●◐○○	1y.
Bash	●●◐○○	1y.
Javascript	●●○○○	1y.

Languages

	Spoken	Written
Français	●●●●●	●●●●●
English	●●●●○	●●●●○
Español	●●●○○	●●◐○○

Computing

MS Office, LaTeX	●●●●○
Git, Github, Gitlab	●●●●○
Linux, MacOS	●●●●○
SolidWorks, CREO	●●●◐○
Altium Designer	●●●◐○
Illustrator, InDesign	●●●○○

Strenghts

Disciplined	Motivated
Leadership	Team Work
Curious	Synthesis
Adaptability	Teaching

Interests

Wave Physics	Project Managment
Photonics	Signal Processing
ML	Simulations
Programmation	Modelisation
Neuroscience	Electronics
Electromagnetism	Embedded
Environnement	Exploration

Education

2022 — M. Sc. - Master in Biophotonics — Université Laval, Québec
GPA : 3.94/4.33

2020 — B. Eng. - Physics Engineering — Université Laval, Québec
GPA : 3.56/4.33

2016 — College - Natural Sciences — Cégep de Sainte-Foy, Québec
GPA : 34.207

Experiences in Engineering

2022–2025 — Space and Defense System Engineer — ABB, Québec

- Member of the EDOSS project, contributing to the plannification, conception and manufacturing phases of a large constellation of advanced EO instruments.
- Coordinated investigations of complex optical issues across multidisciplinary teams
- Designed and implemented software solutions for flight-grade testing and manufacturing, including operator control platforms, automation tools, and efficient algorithms
- Produced manufacturing and testing procedures for flight-grade instruments
- Authored version-controlled technical documentation for internal teams and clients
- Assembled and tested highly specialized instruments in cleanroom environments following NASA workmanship standards

2020–2022 — Biophotonics Master Researcher — CERVO Brain Research Center, Québec

- Developed a Monte Carlo light propagation and diffusion simulator for biological tissues in Python and OpenCL for cross-platform hardware acceleration
- Applied Surface-Enhanced Raman Spectroscopy techniques
- Improved two-photon video microscopy systems
- Performed data analysis and created custom tools in Python
- Managed and maintained laboratory computer systems and servers (system admin)

2019-2020 — Systems Engineering Intern — ABB, Québec

- Supported production and design activities for Guided Wave Radar/LWT products
- Contributed to the design phase of advanced technology products
- Developed automation scripts and provided support for automation developers
- Participated in the design and implementation of product testing workflows

2018-2019 — Biophotonics Engineering Intern — BliQ, Québec

- Assembled one-photon and two-photon microscopy systems
- Contributed to the development of volumetric two-photon microscopy solutions
- Characterized axicon and other optical components
- Authored documentation, reports, and troubleshooting guides for existing systems

Community Involvements

2019-2020 — Founder of REDCO (Student Project) — Université Laval, Québec

2018-2020 — Payload Lead (Aerospace Group UL) — Université Laval, Québec

2018-2020 — Teaching assistant — Université Laval, Québec

2019 — Student Council Executive Member — Université Laval, Québec

Certifications

2024	IYT - International Sail Crew	Levis, QC
2022	Avalanche Security Course (CSA-1)	Le Couloir, Murdocville, QC
2022	Canadian Firearm licence (PPA)	ACVG, Saint-Urbain, QC
2022	Laser Security	Université Laval, Québec, QC
2021	SIMDUT 2015	Université Laval, Québec, QC
2019	Climbing Instructor	Université Laval, Québec, QC
2018	Electricity Security	Université Laval, Québec, QC