William Caron-Bastarache

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EDUCATION

Université de Montréal
B.Sc. in Computer Science (Expected 2027)

Montréal, QC
2024 – Present

- Relevant coursework: Software Engineering, Algorithms & Data Structures, Theory of Computation, Probability & Statistics, Economics

Cégep Édouard-Montpetit
Business Administration with Mathematics

Longueuil, QC
2021 – 2024

École internationale Lucille-Teasdale
High School Diploma

Brossard, QC
2016 – 2021

TECHNICAL SKILLS

Programming: Java, Python, Bash, HTML/CSS
Familiar with: SQL, C, NumPy, Pandas, scikit-learn, JavaScript/TypeScript (React, Next.js)
Tools: Git, GitHub, GitHub Actions, Linux, Power BI, Docker, Maven, IntelliJ, VS Code, LaTeX
Languages: French (native), English (fluent), Spanish (basic)

PROJECTS

Event-Driven Market Probability Engine (In Progress)
2026

- Quantitative research platform using PostgreSQL, Python (NumPy, Pandas), dbt, and Power BI.
- Engineering statistical features (returns, rolling volatility, momentum) from historical market data.
- Developing a probabilistic classification model to estimate next-day market direction.
- Building reproducible SQL transformations and validation tests using dbt.
- Designing dashboards to evaluate signal quality and backtest strategy performance.

MaVille | *Java, Maven, REST, CLI App*
2025

- Developed a municipal management system with persistence, user profiles, notifications, and API integration.
- Implemented resident/contractor features and data persistence (CSV/JSON).
- Added automated testing with JUnit.

Software Testing & CI Quality Gate (GraphHopper) | *Java, JUnit, JaCoCo, PIT, GitHub Actions*
2025

- Designed and implemented targeted unit tests on core utility classes to improve code robustness.
- Measured test coverage before/after using JaCoCo and evaluated fault detection with mutation testing (PIT).
- Built a CI quality gate in GitHub Actions that fails builds on mutation score regression using a persisted baseline.
- Automated CI reporting with persisted baselines to prevent quality regressions across builds.

EXPERIENCE

Lifeguard
City of Brossard

2022 – Present
Brossard, QC

- Ensured safety and responded to emergencies in high-traffic pools.
- Developed teamwork, communication, and crisis management skills.

Nightshift Receptionist
Hotel Labelle

2024
Montréal, QC

- Managed front-desk operations during night shifts, ensuring safety and service continuity.
- Strengthened organizational and communication skills in a high-responsibility role.

INTERESTS

Artificial Intelligence, Statistics, Finance, Software Development, Open-source software, Fitness