

AMINE BOUBRIT

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Canadian Citizen — Eligible for J-1 Visa Sponsorship

EDUCATION

École de Technologie Supérieure (ÉTS) <i>Bachelor of Engineering in Software Engineering</i>	Montréal, QC <i>Expected May 2027</i>
<ul style="list-style-type: none">• Relevant Coursework: Data Structures & Algorithms, Intelligent Systems, Math Programming, Quantum Programming, Parallel Computing Architecture	
CÉGEP Édouard-Montpetit <i>Diploma of Collegial Studies in Computer Science</i>	Longueuil, QC <i>May 2023</i>

EXPERIENCE

University of Colorado Boulder, Computer Science <i>Advisor: Nikolaus Correll</i>	Remote <i>Nov. 2025 – Present</i>
<ul style="list-style-type: none">• Developing high-fidelity MuJoCo simulations for novel light-based optical tactile sensors to model contact mechanics and proximity physics.• Integrating the Inspire humanoid hand into simulated environments; calibrating multi-modal tactile and proximity sensor arrays for robotic manipulation.• Engineering a Liquid Neural Network (LNN) architecture for continuous-time, on-board tactile-to-semantic inference on embedded hardware within the <i>TouchIQ</i> framework.• Optimized the Hugging Face <i>SmolVLA</i> model for the <i>XLeRobot-Pro</i> platform, enabling real-time edge-AI inference on the NVIDIA Jetson Orin Nano Super.• Improved spatial continuity in the Inverse Kinematics (IK) solver, mitigating joint trajectory discontinuities during autonomous grasping routines.• Acknowledged for core technical contributions to Shaw et al., “<i>Cutting the Cord: System Architecture for Low-Cost, GPU-Accelerated Bimanual Mobile Manipulation</i>,” arXiv:2603.09051 [cs.RO], 2026 (under review at IEEE/RSJ IROS 2026).	
École de Technologie Supérieure (ÉTS), Software Engineering <i>Advisor: Sheldon Andrews</i>	Montréal, QC <i>Sep. 2025 – Present</i>
<ul style="list-style-type: none">• Building a full-stack sports analytics platform for Olympic partners (Boxing Canada, INSPQ) to enable real-time biomechanical video analysis.• Designed a video object segmentation pipeline using XMem in place of ByteTrack, reducing occlusion-related tracking failures by 99%+ in high-velocity athletic footage.• Deployed and fine-tuned deep learning models for pose estimation and predictive analytics in a production environment.• Optimized backend data pipelines and UI architecture, reducing processing latency by 4× to support real-time feedback for coaching staff.• Ran data-quality audits to resolve dataset annotation errors; presented and validated the system directly to the Boxing Canada Director and Olympic coaching staff.	
Quminex <i>Machine Learning Research Intern</i>	Remote <i>Feb. 2026 – Apr. 2026</i>
<ul style="list-style-type: none">• Adapted seismic diffusion models for synthetic geomagnetic field generation; designed a UNet with a localized self-attention bottleneck at the 8×8 resolution layer.• Built an automated spatial data pipeline with <i>rasterio</i> to ingest and filter high-dimensional GeoTIFF rasters, producing a normalized corpus of 68,000 localized 64×64 tensor tiles.• Trained the model over 150 epochs; addressed running-statistics drift with GroupNorm and stabilized high-frequency variance using EMA ($\alpha = 0.9999$).• Evaluated spatial fidelity via RAPS Log-MAE (0.080) and Variogram NMAE (0.158), confirming preserved autocorrelation structure.• Drafted an architectural roadmap for extending the UNet into a resolution-agnostic conditional diffusion model.	

Employment and Social Development Canada (ESDC)

Montréal, QC

Data Developer Intern

Jan. 2025 – Apr. 2025

- Designed and optimized SQL and Python data pipelines for large-scale federal reporting systems.
- Developed an automated Resource Decision-Making (RDM) tool in Python, improving forecasting and resource allocation efficiency.
- Collaborated with data analysts to ensure data accuracy, resolve backend issues, and enhance system reliability.

Clear-Com

Saint Bruno, QC

Software Test Automation Engineering Intern

Mar. 2023 – Jul. 2023

- Architected an automated testing framework for the flagship project, serving as technical lead for automation efforts.
- Developed 30+ automated test suites using Pytest and Selenium, reducing frontend regressions.
- Debugged and optimized AngularJS UI components, resolving 25+ defects and improving responsiveness.
- Contributed to daily code reviews in a 10-developer team, promoting clean, scalable, and maintainable practices.

PROJECTS

GemmaEvolve | *Python, Ollama, Docker, gVisor*

Apr. 2026

- Engineered an asynchronous evolutionary code-generation pipeline featuring a filesystem-backed program database, checkpoint/resume functionality, and staged evaluation modules.
- Integrated local LLM inference via Ollama and built secure, hardened execution sandboxes using Docker and gVisor to safely evaluate generated code against complex deterministic benchmarks.

GlobeX (OSINT Dashboard) | *React 19, TypeScript, Python, WebSockets*

Mar. 2026

- Developed a real-time, 3D interactive intelligence dashboard tracking global military aircraft, maritime vessels, and active defense satellites using Airplanes.live, AISStream, and CelesTrak APIs.
- Built a Python WebSocket proxy server to ingest live OSINT data from Telegram channels via Telethon, utilizing OpenRouter AI to automatically classify and map global threat events by severity.

TECHNICAL SKILLS

Languages: Python, Java, C, C++, C#, JavaScript, TypeScript, Dart, Bash

Frameworks: React, Angular, Node.js, Next.js, Spring Boot, .NET Core, ASP.NET Core

AI & Machine Learning: PyTorch, TensorFlow, Hugging Face, OpenCV, SciPy

Robotics & Simulation: MuJoCo, CUDA

Databases & Tools: PostgreSQL, MySQL, MongoDB, Docker, Git, Azure DevOps, Fusion 360