Antoine Boucher

SOFTWARE ENGINEER — BACKEND / PLATFORM / DEVSECOPS

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Profile

Platform-oriented software engineer focusing on backend services, CI/CD, and developer experience. Mixes feature delivery with infrastructure-as-code, testing, and observability practices across AWS, Azure, and GCP. Open-source contributor and DevSecOps teaching assistant currently completing a Master's in Information Technology Engineering at ÉTS.

Core Skills

Languages	Python, Kotlin/Java, JavaScript/TypeScript, C++
Backend	FastAPI, Django, NestJS, Spring Boot, GraphQL, REST APIs, Microservices, Swagger/OpenAPI
Cloud / Platform	AWS, Azure, GCP, Docker, Kubernetes, Terraform, GitLab CI/CD, GitHub Actions, Nginx, Auth0
Data / Messaging	PostgreSQL, MongoDB, Redis, Kafka, Data Science, Business Research
Quality	JUnit, Playwright (integration/E2E), SonarQube, observability/logging, feature flags

Experience

IMC2 – Institut multidisciplinaire en cybersécurité et cyberrésilience
Remote (Montréal, QC)

Research Assistant (Permanent Part-time) — *Mar 2025 – Present*

- Managed CI/CD pipelines with GitLab CI and GitLab Runners for end-to-end DevSecOps workflows, improving deployment reliability
- Optimized cloud-native systems on Google Cloud Platform (GCP), enhancing scalability and performance
- Developed Java microservices with robust unit tests (JUnit) and integration/E2E tests (Playwright), achieving high test coverage
- Containerized services with Docker and deployed with Kubernetes, Terraform, and Nginx, streamlining infrastructure management
- Created a cybersecurity risk-scoring algorithm and an interactive risk-visualization UI (Angular) for enhanced threat analysis
- **Technical Skills:** Java, JavaScript, GCP, Kubernetes, Docker, Terraform, GitLab CI, Nginx, JUnit, Playwright, Angular

Polytechnique Montréal
Montréal, QC (On-site)

Teaching Assistant, LOG8100 DevSecOps (Contract Part-time) — *Sep 2024 – Jan 2026*

- Created and improved course/lab content focused on secure software delivery (DevSecOps)
- Set up and maintained the GitLab project structure for 20 teams (repositories, CI/CD templates, runners/workflows), and managed permissions/access control
- Assisted teams with Docker and Kubernetes fundamentals (containerization, deployments, debugging)
- Supported security learning with practical references to OWASP (common web risks, secure practices, and remediation mindset)
- Corrected practical assignments and provided technical coaching to unblock teams and improve deliverables
- **Technical Skills:** GitLab, CI/CD, DevSecOps, Docker, Kubernetes, SonarQube, OWASP, Secure Coding, Linux

École de technologie supérieure (ÉTS)
Montréal, QC (Hybrid)

Teaching Assistant (Contract Part-time) — *Feb 2024 – Present*

- **TCH057 - Mobile Applications and User Experience (Winter 2024):** Supported students during labs by answering questions on course concepts and assignments (mobile dev + UX fundamentals)
- **IND500 - Distributed Databases (Fall 2025):** Created and updated lab content (SQL, MongoDB, Kafka, PostgreSQL) aligned with modern distributed data concepts; designed and corrected lab assignments with detailed feedback and grading rubrics
- **TCH099 - Informatics Integrator Project (Summer 2024, Winter 2025, Summer 2025):** Supported students with debugging, architecture choices, and project integration (backend + data pipelines); helped instructors update/test course infrastructure across cohorts (including Microsoft Azure where relevant); guided teams on delivery practices and project execution (requirements clarification, milestones, SCRUM basics)
- **GTI660 - Multimedia Databases (Summer 2024):** Created and updated lab content; designed and corrected lab assignments; provided detailed feedback to students
- **GTI320 - Mathematical Programming: Patterns & Efficient Algorithms (Winter 2026):** Supported course delivery and student learning
- **Technical Skills:** SQL, MongoDB, Kafka, PostgreSQL, Distributed Databases, Microsoft Azure, Android Studio, UI/UX, SCRUM

IONODES
Laval, QC (Hybrid)

Cloud Developer (Permanent Full-time) — *May 2023 – Aug 2023*

- Designed and implemented a 3-tier subscription system with organization-based permissions using Auth0 for the IoT platform
- Developed Sentry SDK integrations in C# to enhance logging with Serilog, improving error tracking and monitoring
- Acquired expertise in ONVIF and WebRTC protocols for IoT video streaming applications
- Orchestrated deployments through Azure DevOps with feature flags and structured release workflows
- **Technical Skills:** C#, .NET, Azure DevOps, Auth0, Sentry, Serilog, UML, Microservices, ONVIF, WebRTC

Intact
Back End Developer (Co-op)

Montréal, QC (Hybrid)

Jan 2022 – May 2022

- Created new campaigns based on client sign-up dates, providing personalized experiences for new clients
- Implemented API endpoint logic for enrolling new clients on legacy systems, streamlining the onboarding process
- Developed backend login and MFA API for mobile apps using Kotlin, providing secure and easy access for clients
- Improved ELK stack by creating Kibana dashboards for effective error management and defined error codes across multiple microservices
- **Technical Skills:** Kotlin, Spring Boot, GraphQL, MongoDB, Microservices, Docker Swarm, Jira, Kibana, SAFe

Divine Essence (Union-Nature)
Web Specialist (Contract Part-time)

Dorval, QC (On-site)

Jun 2020 – Dec 2020

- Redesigned bilingual blog (French and English), improving user experience and accessibility
- Implemented custom dynamic sales labels for search optimization on CommerceBuild, enhancing SEO performance
- Built custom "Add to Cart" API call workflow, streamlining e-commerce transactions
- Provided technical support and internal training on HTML, CSS, and JavaScript fundamentals
- Fixed popup, banner, and grid CSS issues; deployed a 3CX chatbot integration for customer support
- **Technical Skills:** HTML, CSS, JavaScript, CommerceBuild, 3CX, SEO

Power Go
Full Stack Web Developer (Co-op)

Montréal, QC

Sep 2020 – Apr 2021

- Utilized Python, Django, Vue.js, and PostgreSQL to develop a versatile data parser capable of handling XML, JSON, CSV, and Excel formats
- Integrated APIs for Facebook Shop and Marketplace, expanding sales channels
- Implemented a currency exchange rate system for CAD/USD conversions for complete inventory system and date synchronization
- **Technical Skills:** Python, Django, Vue.js, PostgreSQL, MongoDB, JavaScript, REST API, Git, Jira, Full-Stack Development

Wandrian
Full Stack Developer (Part-time)

Montréal, QC

Aug 2019 – Jan 2020

- Collaborated with Railkey Tech team to optimize the Italiarail website performance and user experience
- Assisted with Braintree Payment Support integration, ensuring smooth and secure transactions
- Undertook UI redesign to improve user experience and interface consistency
- Implemented an automated testing solution using Selenium to streamline code testing and ensure website robustness
- **Technical Skills:** Python, Django, JavaScript, jQuery, Selenium, MongoDB, REST API, Git, Jira, Test Automation

Wandrian
Full Stack Developer (Co-op)

Montréal, QC

May 2019 – Aug 2019

- Utilized Python, Django, Pyramid, and jQuery to enhance website and customer service tools
- Created an analysis dashboard enabling customer services to monitor currency usage effectively
- Redesigned ticketing frontend based on new design guidelines to improve user experience
- Rewrote infrastructure for Selenium end-to-end testing, optimizing the testing process
- Developed API endpoints facilitating ticket purchases; addressed and fixed bugs to improve website functionality
- **Technical Skills:** Python, Django, Pyramid, JavaScript, jQuery, Selenium, MongoDB, REST API, Git, Jira, Test Automation

Algolux
Algorithm Developer (Internship)

Montréal, QC (On-site)

May 2018 – Aug 2018

- Created Ansible scripts and Linux architecture system diagrams for REST API installation on USB-run Qemu VM ISO UEFI, enabling HDR 10bpp test image testing for Nexus 6 ISP
- Developed a REST API using Python Flask for remote control of MacBook displays
- Managed capture of 12,000 pictures using an 8-foot tripod across Montreal to create a security camera dataset with annotation applications on Linux for AI training
- Developed a Python-based tool for color analysis of raw images, enhancing image quality adjustment capabilities
- Created a software solution for remote control of camera arms, enabling image capture from diverse angles and distances
- Set up QNAP backup server for Ubuntu workstations; assisted with server networking tasks
- **Technical Skills:** Python, C++, CUDA, OpenCV, Flask, Ansible, Linux, REST APIs

Algolux
IT Technician (Internship)

Montréal, QC (On-site)

May 2017 – Aug 2017

- Supported Linux/Windows workstations and server environment used for image processing experiments and REST tooling
- **Technical Skills:** Linux, Windows, Server Administration, REST APIs

École de technologie supérieure (ÉTS)
Manager, MakerSpace (Part-time)

Montréal, QC (On-site)
Sep 2016 – Apr 2023

- Operated makerspace facility (3D printers/VR/electronics), maintained equipment, and supported student projects end-to-end
- Assisted students with digital fabrication, prototyping, and innovation projects
- Ensured materials and tools were always available for users; promoted innovation and creativity in digital fabrication and virtual reality
- **Technical Skills:** 3D Printing, VR, Electronics, Equipment Maintenance, Digital Fabrication

Collégial International Sainte-Anne
Manager of the MakerSpace (Part-time)

Montréal, QC (On-site)
Jan 2006 – May 2017

- Operated makerspace laboratory of electronics and software development (3D printers/VR/electronics)
- Ensured materials and tools were always available for users; assisted students with 3D printers and VR equipment
- Helped troubleshoot technical issues and guided students in innovative projects; maintained and repaired 3D printers
- **Technical Skills:** 3D Printing, Electronics, Equipment Maintenance

Education

École de technologie supérieure (ÉTS)
Master's Degree, Information Technology Engineering

Montréal, QC, Canada
Aug 2023 – Dec 2025

École de technologie supérieure (ÉTS)
Bachelor's Degree, Information Technology Engineering

Montréal, QC, Canada
Sep 2018 – Apr 2023

Publications

Certifications & Programs

Certification	AWS Certified Cloud Practitioner
Programs	Programme Québécois d'Entrepreneuriat Scientifique (QcES)
Cloud Quest	Data Analytics, Networking, Cloud Practitioner, Machine Learning, Serverless Developer, Solutions Architect
Conference Presentations	Graphquon 2025 (Nov 15-16, 2025) - Annual Quebec-Ontario Pre-SIGGRAPH Workshop, University of Toronto

Selected Projects (Most Relevant)

MarkÉTS & AlgoÉTS Trading Platform
Fintech / Algorithmic Trading Platform

ÉTS Algorithmic Trading Club
Jan 2023 – Present

- **President & Lead Developer:** Leading the algorithmic trading club at ÉTS, combining engineering, finance, and data science
- **MarkÉTS Paper Trading Platform:** Developed and maintained a live paper trading competition platform serving 170+ participants with 4,154 executed orders; achieved 99%+ uptime during 4-month competition
- **InvestorBroker Trading Engine:** Built core trading platform infrastructure supporting real-time order execution, portfolio management, and leaderboard systems
- **AlgoÉTS Website:** Developed and maintained club website (algoets.etsmtl.ca) with member management, educational content, and platform integration
- **Trading Strategies & Backtesting:** Developed automated trading strategies using Python (Pandas) with comprehensive backtesting frameworks for strategy validation
- **Impact:** Scaled development team from 14 to 20 members; deployed 15+ features during live competition; enabled first institution-wide trading competition at ÉTS
- **Technical Skills:** Python, Django, PostgreSQL, Real-time Systems, Financial APIs, Backtesting, Portfolio Management, Infrastructure Maintenance

uml-mcp, D2COpenAIPlugin, plantumlapi
Developer Tools / UML Diagram Generation

Open Source

- **uml-mcp:** MCP-based server enabling UML diagram generation from natural language, integrating with AI coding assistants for automated documentation
- **D2COpenAIPlugin:** Plugin generating multiple diagram formats (PlantUML, Mermaid, Diagrams.net) from prompts, streamlining developer workflow and architecture visualization
- **plantumlapi:** Python library providing programmatic interface to PlantUML web workflows, enabling batch diagram generation and CI/CD integration

Graphquon 2024 Website & ChatGPT Plugin

École de technologie supérieure
(ÉTS)

Conference Website Development / Developer Tools

Sep 2024 – Nov 2024

- **Conference Website Developer:** Developed the official conference website (graphquon.github.io) for the Graphquon 2024 Annual Quebec-Ontario Pre-SIGGRAPH Workshop
- **ChatGPT Plugin:** Created UML diagram expert ChatGPT plugin to support conference attendees with diagram generation; integrated with OpenAI's plugin ecosystem
- **Technical Skills:** Web Development, ChatGPT Plugin Development, UML Diagram Generation, Conference Website Maintenance

another-install-script, retroarch-web-games

Open Source

Infrastructure Automation / DevOps

- **another-install-script:** Interactive menu-based deployment tool for managing multiple Docker containers and system configurations; integrates Docker Compose and Ansible for infrastructure-as-code
- **retroarch-web-games:** Containerized RetroArch web gaming platform with automated deployment and packaging for self-hosted gaming infrastructure
- **DasherControl:** Interactive configurable dashboard with customizable GridItem components supporting IFrame and Bookmark integrations; enables flexible dashboard customization for various use cases

MarketWatch API, Home Assistant Integration, Sentry SDK

Open Source

API Integrations / Data Automation

- **marketwatch (PyPI):** Published Python library for MarketWatch virtual trading platform API; provides programmatic access to watchlists, portfolio tracking, and leaderboard data for algorithmic trading applications
- **hass_renpho:** Custom Home Assistant integration for Renpho smart scale metrics (Jun 2023 – Sep 2024); enables health data automation and integration with smart home ecosystems
- **Serilog.Sinks.SentrySDK:** .NET Serilog sink plugin simplifying Sentry error and log management; streamlines observability integration for .NET applications

Snapchat Lens Studio

2017–2020

Augmented Reality / Content Creation

- Created 42 augmented reality lenses using Snapchat Lens Studio; achieved 6.2M total plays, 12.1M views, and 614.8k shares across published lenses
- Developed interactive AR experiences combining 3D modeling, face tracking, and visual effects