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)
Montréal, QC (On-site)
Manager, MakerSpace (Part-time)
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
Montréal, QC (On-site)
Manager of the MakerSpace (Part-time)
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)
Montréal, QC, Canada
Master's Degree, Information Technology Engineering
Aug 2023 – Dec 2025

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

Selected Projects (Most Relevant)

MarkÉTS & AlgoÉTS Trading Platform
ÉTS Algorithmic Trading Club
Fintech / Algorithmic Trading Platform
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
- **AlgoETS 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
Open Source
Developer Tools / UML Diagram Generation

- **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

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

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; 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