Olivier Chouinard-Banville

Infrastructure, data systems and LLM tooling · Pont-Rouge, Quebec
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I'm the technology coordinator at Genovalia, Université Laval, where I design, deploy and operate the infrastructure behind a research programme in animal genomics: a data catalogue, standardised schemas, a metadata API and a data explorer used by scientists and their partners.

I work across the full stack of a production research platform: OpenShift and Kubernetes, CI/CD, identity and access management, object storage, and the Python services that run on top of them. Before that, at a political science research chair, I applied machine learning to large text corpora and built automated content-analysis tools and an interactive survey platform.

Outside work, I run a homelab of several machines and write the software on it: a gateway in front of a local LLM, a personal knowledge graph with search by meaning, and MCP servers (the protocol AI assistants use to call outside tools) so AI assistants can use them. They're the same questions I deal with at work, at home size: which operations an agent may run, what it may see, what gets logged, and which irreversible actions stay with a person.

Experience

Nov 2022 – present

Technology Coordinator and Metadata Specialist

Genovalia, Université Laval
Part-time until 2025, full-time since

- Build and operate the production platform of a research programme in animal genomics on the university's OpenShift cluster: environments, containers and resources, PostgreSQL, S3 storage on Ceph, monitoring, upgrades and incident response.
- Design and develop the data services themselves, a metadata API and a data explorer in Python, then ship them with GitHub Actions and versioned Kustomize manifests across development, test and production.
- Designed Genovalia's metadata model on DCAT in JSON-LD, with controlled vocabularies and ontology mappings, so datasets stay findable and reusable beyond the project that produced them.
- Built curation and validation pipelines for public genotyping datasets (Dryad, Zenodo, Borealis): DCAT descriptions, OCA schemas, quality reports and ingestion into the catalogue.
- Own identity and access: Keycloak and OpenID Connect, federated research identity and ORCID, roles for the internal team and external partners.
- Coordinate the developers and work daily with scientists who aren't software engineers, turning research questions into technical requirements.

Nov 2022 – 2025

Business Analyst, Data Management

Centre de recherche en données massives (CRDM), Université Laval
A separate contract, alongside the Genovalia post

- Supported research projects in health, environment, social sciences and animal sciences, from defining requirements to putting tools into service.
- Developed technology solutions for research teams and adapted research methods to the university's infrastructure.

2021 – 2022

IT Analyst, Full-stack Developer

Université Laval

- Custom research tooling for health and social science projects.

2018 – 2023

Consultant and Associate Researcher

CLESSN, Université Laval (self-employed)
Part-time; full-time 2020–2021

- Machine learning applied to political and media text corpora, evaluated against human-coded samples.
- Automated content-analysis tooling and an interactive survey and salience-analysis platform.
- Django backends for research projects, including Projet Quorum; technical support and training for graduate students.

2019 – 2020

Change Management Consultant

Edgenda

- Office 365 rollout at the Quebec National Assembly: deployment phases, device and workstation migration.

2017 – 2019

Test Coordinator, then Environment Configuration Lead

Fujitsu Americas (contracts at the CSPQ)

- SAGIR upgrade to Oracle EBS R12: maintained multiple Oracle environments, automated regression testing, liaison with client ministries.

2016 – 2017

Technical Documentation Designer

ACPE inc.

- Documentation standards, training material, English-to-French translation.

2010 – 2011

Video Game Developer

Frima Studio

- Web game development and mentoring of interns.

Education

2017

B.A., Political Science

Université Laval

2010

AEC, Video Game Programming and Integration

Collège Bart

Skills

Programming and web	Python, FastAPI, Django, TypeScript, SvelteKit, Vue / Nuxt, Wagtail, R, SQL
LLM systems	Ollama, MCP servers, OAuth for AI clients, JSON Schema outputs, pgvector
Machine learning	Text corpora, Automated content analysis, Evaluation against human coding
Security and access	Keycloak, OpenID Connect, ORCID, Passkeys / WebAuthn, Scoped API tokens
Infrastructure	OpenShift, Kubernetes, Docker Swarm, Caddy, WireGuard, Kustomize, GitHub Actions, Microsoft 365 / Exchange
Data systems	PostgreSQL, S3 / Ceph, DCAT, JSON-LD, OCA, Ontologies, F.A.I.R.
Observability	OpenShift monitoring, Gatus, Sentry, Vector

Continuing education

2022	Architecting on AWS · AFI Expertise
2017	Scrum Master · AFI Expertise
2016	Green Belt in continuous improvement · AFI Expertise

Languages

French (native) · English (fluent)

Interests

Historical reenactment with the Société d'histoire des Filles du Roy, including a Régiment de Carignan-Salières kit I partly make myself. Leatherworking, 3D printing and small electronics. Tabletop role-playing games, and game development.