

# David Lougheed

Full-Stack Software Developer • Bioinformatician  
Montréal, Québec, Canada

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## WORK EXPERIENCE

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**Canadian Centre for Computational Genomics (C3G), McGill University**

**Montréal, QC**

*Software Developer*

2019–2020, 2022–present

- Founding developer and system architect for the Bento Platform, which facilitates the discovery, sharing, and visualization of -omics data and associated metadata. This project is now being used or will be used by seven large projects, including the Québec COVID-19 Biobank, and is worked on by several full-time developers.
- Principle developer on the Freezeman project from April–August 2020. This project is a sample-tracking system created to manage samples collected during the COVID-19 pandemic, which later grew into a full laboratory information management system (LIMS) used by the McGill Genome Centre, with multiple full-time developers and 450 000+ samples.

*Intern, Data Team*

2018–2019

- Developed three web applications, including one published as part of an article in *Nature Communications* (Grajcarek *et al.*, 2019) using D3.js for complex data visualization.
- Analyzed RNA-seq data using an in-house data processing pipeline.

**Queen's University Biological Station**

**Kingston, ON**

*Field / Network Technician*

2015–present (occasional)

- Assisted in deploying and maintaining a network of remote, satellite-linked climate stations.
- Deployed new Ubiquiti UniFi-based networks across multiple multi-building campuses, supporting 100+ concurrent users across 14 buildings at peak and increasing throughput by ~5x.
- Implemented software to power a interactive trail guide mobile application with 200+ installs via a custom content management system (CMS) using React Native, Expo, React, and Flask.

**McGill University**

**Montréal, QC**

*Course Assistant for COMP 421: Databases*

Jan - Apr 2019

Held office hours and graded assignment questions on relational algebra and databases.

## EDUCATION

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**Master of Science, McGill University**

**Montréal, QC**

*Department of Human Genetics. GPA: 4 / 4.*

2020–2022

- **Thesis:** Using High-Fidelity Long-Read Sequencing to Better Detect and Understand Short Tandem Repeat Variation in Humans.
- **Select Courses:** Statistical Concepts in Genetic and Genomic Analysis, Population Genetics.

**Bachelor of Science, McGill University**

**Montréal, QC**

*Joint Honours Computer Science and Biology. GPA: 3.94 / 4.*

2015–2019

- **Select Courses:** Applied Machine Learning, Statistics, Honours Algorithms and Data Structures.

## SKILLS AND LANGUAGES

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- **Programming Languages:**
  - Proficient in Python and JavaScript/TypeScript.
  - Some experience with Rust, R, C++, PHP.
- **Web Frameworks:** Flask/Quart, FastAPI
- **Front-End Frameworks:** React, Vue, D3.js
- **Libraries:** numpy, scikit-learn, PyO3 (Rust bindings for Python), Keras
- **Databases and Data Stores:** PostgreSQL, MySQL, MongoDB, Redis
- **Deployment and Containerization:** Docker, Compose, Apptainer
- **DevOps:** GitHub Actions. Some experience with GitLab CI/CD.
- **Languages:** Native English speaker, limited working proficiency in French.