# Michael Mior

## Summary

Accomplished data science leader and full-stack developer with over a decade of experience across academia and industry. Track record of authoring highly-cited research, contributing to major open-source projects, and mentoring students on cutting-edge data systems. Seeking to apply deep expertise in data science and engineering to build innovative solutions for complex problems.

## Contact Information

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| Email | michael@mior.ca | Phone | 585.483.5907 | Website | michael.mior.ca |
| GitHub | michaelmior | LinkedIn | /in/michaelmior | | |

## Work Experience

08/2018–Present **Assistant Professor, Data Science**, *Rochester Institute of Technology (RIT)*

- Directed the Data Unity Lab, developing cutting-edge data management research
- Taught data science and engineering to graduate students with consistently high enrollment and student evaluations 25% above average
- Developed a new course on NoSQL and NewSQL databases to meet demand for advanced data science courses, enrolling over 100 students
- Advised over 20 Masters and PhD students on thesis and capstone projects, contributing to their successful graduation and publication of research findings

2017–Present **Project Management Committee, Apache Calcite**, *Apache Software Foundation*

- Contributed an adapter for Apache Cassandra, enabling SQL queries on Cassandra
- Collaborated with a student to contribute an Apache Arrow adapter for in-memory queries
- Assisted with project governance and management
- Published a paper on the system in the ACM SIGMOD conference that has been cited 300+ times

2017–2018 **Vice President, Apache Calcite**, *Apache Software Foundation*

- Elected as project chair during first year on the Project Management Committee
- Managed quarterly reporting to the board and addressed any concerns raised

04/2012–07/2013 **Associate Product Manager**, *Bunch*

- Architected and developed both frontend, backend, mobile applications for the product
- Onboarded new developers, managed product releases and infrastructure
- Designed/implemented global search for 10,000+ users to support product goals

02/2011–03/2012 **Senior Web Developer**, *Bunch*

- Developed across the full stack using JavaScript, PHP, and Python to build high-performing social networking Web applications
- Managed backend services from deployment through to thousands of users per hour
- Developed a distributed system for clustering and analysis of data for 1M+ users

## Education

2018 **PhD, Computer Science**, *University of Waterloo*

- Developed novel high-level query optimization techniques for non-relational data systems
- Publications received 100s of citations and launched international collaborations
- Degree funded by multiple internal and external scholarships >$25K
- Received second place David R. Cheriton Distinguished Dissertation Award

2011 **Master of Science, Computer Science**, *University of Toronto*

- Designed and implemented a mechanism for low-latency database scalability using virtual machine cloning

- Published work based on the system received the Best Student Paper award
- Constructed modifications to the Linux kernel, the Xen hypervisor, and MySQL in C
- Received full scholarship from a government grant based on proposed research

2009 **Bachelor of Science, Computing Science**, *Ontario Tech University*, GPA: 4.17

## Projects

**JSONoid: JSON Schema Discovery**

*11,000+ lines of Scala – Apache Spark – GitHub Actions*

- Automated tool for discovering JSON schemas from collections of JSON documents
- Scalable to millions of documents with more detailed schemas than existing tools

**Relational Playground: Teaching the Duality of Relational Algebra and SQL**

*8,000+ lines of JavaScript – React – SQL – GitHub Actions*

- Developed a React application in JavaScript for teaching relational algebra and SQL
- Received funding from an internal grant from the Rochester Institute of Technology
- Mentored student developers and published a workshop paper at a top-tier conference

**ReSpark: Automatic Caching for Iterative Applications in Apache Spark**

*Scala – Apache Spark*

- Modified Apache Spark internals to automatically make effective use of caching
- Led to exponential speedup for many Spark applications with no code changes

## Professional Contributions

2023–2025 **Admission Committee Member**, *RIT*, Computing and Information Sciences Ph.D.

- Developed a new process for preparing application information to streamline admissions
- Reviewed application material for 100+ students yearly

2019–Present **Reviewer**, *Various top-tier conferences and journals*

- Regularly invited as a reviewer with over 100 reviews completed
- Continually kept up to date with the latest in data systems research
- Participate in the discussion process to provide valuable feedback to authors
- Received an award for consistent timely and high-quality paper reviews

2019–2021 **Curriculum Committee Member**, *RIT*, Computing and Information Sciences Ph.D.

- Proposed and helped implement a new simplified policy for publication requirements, saving hours of faculty and student time annually
- Assisted with research potential assessment for new Ph.D. students

2019 **Coach**, *International Collegiate Programming Competition*

- Coached teams to 1, 2, 4, and 9th place in the regional qualifiers
- Top team earned 7th place behind many top schools including MIT and Harvard

## Technical Skills

- Amazon Web Services (EC2, S3, RDS)
- Continuous Integration/Deployment (Jenkins, GitHub Actions, Travis CI)
- Databases (SQL, MongoDB, Apache Cassandra, Neo4j, Elasticsearch, Redis)
- Data analysis (Pandas, NumPy, SciPy, Matplotlib, Seaborn)
- Distributed computing (Apache Hadoop, Apache Spark)
- Frontend (HTML, CSS, React)
- Machine Learning/AI (PyTorch, Large Language Models (LLMs), Hugging Face, Weights & Biases)
- Platform Engineering (Distributed systems, Docker, Kubernetes)
- Languages (Bash, C, Python, Scala, Java, JavaScript, TypeScript, Ruby, Rust)
- Version control (Git, Mercurial, SVN, CVS, GitHub, GitLab)

+1 (585) 483-5907 • michael@mior.ca