

Michael Pereira

[mwperreira.ca](mailto:mwpereira.ca) mwpereira07@gmail.com [linkedin.com/michael-pereira-07](https://www.linkedin.com/michael-pereira-07) github.com/Mwpereira

Experience

IBM

Full-Stack Developer II

Mar 2025 – Present | Markham, Canada

- Led design and implementation of a **Multi-Vector Index architecture** for an enterprise AI platform, enabling **multi-embedding RAG workflows** and improving retrieval relevance by **30%** while increasing stability via **vector index guardrails**.
- Built an end-to-end AI response evaluation system using **watsonx.data**, integrating **truthfulness, reliability, and cost-performance metrics** via APIs, persistence schemas, and UI integrations to enable **data-driven optimization of AI outputs**.
- Integrated Langflow into a **Kubernetes-based AI platform** by redesigning containerization and **CI/CD workflows** with optimized multi-stage **Docker images**, hardened health checks, and automated deployments, improving release reliability and reducing deployment overhead by **40%**.
- Optimized AI inference by improving **SSE and chunked streaming** across frontend and backend systems, enabling **incremental response rendering** that reduced perceived latency by **35%** and resolved **streaming reliability** issues.
- Designed and implemented a centralized **MCP Gateway** for all MCP servers, unifying **authentication, authorization, and logging** into a single entry point, reducing integration complexity by **30%** and improving **observability** and governance.

Software Developer

Jun 2023 – Mar 2025 | Toronto, Canada

- Developed **Angular/TypeScript** features for **payments and travel platforms**, optimizing critical customer journeys and reducing task completion times by **20%** through improved workflow **design and usability**.
- Improved performance and responsiveness of accounts and transactions **micro-apps** by optimizing UI behavior, enhancing **mobile responsiveness**, and strengthening **Jest**-based test coverage, while improving **CI/CD** reliability via **Bitbucket** and **Jenkins**, reducing page load times by **50%**.
- Architected a **scalable frontend component system** that improved rendering performance and standardized **WCAG-compliant accessibility** through **ARIA, keyboard navigation, and semantic HTML**.
- Collaborated with leadership, product owners, and cross-functional **Agile teams** to translate business requirements into **scalable technical solutions**, improving **delivery alignment** and reducing downstream **rework** and ambiguity.
- Owned production support for **core banking services**, resolving **high-severity incidents**, remediating **critical vulnerabilities**, and improving accessibility to enhance **platform reliability and compliance**.

Toronto Metropolitan University | MFI Lab, Full-Stack Software Developer

Jan 2022 – May 2023 | Toronto, Canada

- Created a **React, TypeScript, and Electron** control application for a custom **6-DOF MRI-compatible robotic phantom**, automating **Arduino-driven motion sequencing** and supporting sub-millimeter motion validation while reducing manual testing effort by **40%**.
- Designed and implemented a scalable full-stack **medical imaging platform** using React, Node.js, Redis, and **AWS**, integrating **AI-driven DICOM processing** pipelines that automated fetal MRI segmentation, motion correction, and anatomical classification, standardizing **clinical evaluation workflows**, and reducing dependence on specialized radiology expertise.
- Engineered a scalable cloud-based **surgical assessment platform** using Nuxt, Spring Boot, and **AWS (S3, DynamoDB, API Gateway, EC2)**, architecting **media processing and storage workflows** that improved upload performance by **25%** and supported growth in clinical assessment volume.

Education

Bachelor of Science in Computer Science (Honours),

Sep 2018 – May 2023 | Toronto, Canada

Toronto Metropolitan University

Undergraduate Research Assistant within the MFI Lab as a Full-Stack Developer.

Skills

- **Web:** React, Node.js, Express, Fastify, Tailwind, REST, GraphQL, Swagger, Angular
- **Programming:** TypeScript, JavaScript (ES6), Python, Java, Bash, SQL, NoSQL
- **Databases:** DynamoDB, PostgreSQL, MySQL, MongoDB, DocumentDB, Redis
- **Tools:** AWS, Git, Agents, MCP, Docker, Claude, Terraform, Jenkins, Linux, Figma, Nginx, OpenShift, JIRA
- **Testing:** Vitest, Playwright, Cypress, Jest, Pytest, Selenium

Publications

Fetal Assessment Suite (FetAS): a web-based platform for automatic fetal MRI analysis using AI [🔗](#), *Springer Nature*

16 Dec 2025

Certificates

AWS Certified Cloud Practitioner [🔗](#) — Issued by Amazon Web Services (AWS), 10 Jan 2025