

# Mostafa Okasha

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## EXPERIENCE

### Software Engineer – Meta (Reality Labs)

Toronto, ON | Nov. 2024 – Feb. 2026

- Designed and deployed a custom NGINX ingress layer to route secure gateway traffic into Kubernetes services
- Led the migration of a distributed ML platform, fully rebuilding compute, storage, & networking infrastructure
- Contributed to real-time contextual AI experiences on XR devices by integrating perception & decision models
- Rewrote CPU-bound image preprocessing into GPU kernels to achieve a **350x** speedup with **<1%** output drift
- Led the migration of **30+** models to MIG GPU infra, also resolved memory, scheduling, & scaling issues
- Enabled CONNECT tunneling via forward proxy for cross-network ML traffic, improving throughput by **2x**
- Built benchmarking and evaluation pipelines to measure & improve model latency, throughput, and accuracy

### Founder – MapSight

Waterloo, ON | Apr. 2024 – Present

- Built a **geospatial analytics Web App** to find optimal distribution locations for Auto Parts businesses by analyzing driving time metrics for all auto industry-related locations (*AWS, React, Python, Flask, DynamoDB*)
- Designed Industry Locations API to ensure all locations within an area are obtained with up-to-date info
- Used *Cosine Similarity, FuzzyWuzzy & Agglomerative Clustering* with an LLM to categorize industry locations
- Currently adding new industries & automating the new industry location searches & categorization processes

### Software Engineer, AI Training – Scale AI's Outlier

Remote | Jan. 2024 – Nov. 2024

- Wrote **30+ DSA coding problems & solutions** not found in the existing problem corpus. Also reviewed over **230+** submissions, providing feedback to authors to maintain quality novel submissions (*Python, Java, C++*)
- Worked on **12 LLM RLHF projects**, gaining experience in previously unfamiliar languages & frameworks including *C# & .Net, PHP & Laravel, Ruby & Ruby on Rails, Kotlin & Android development, & Dart & Flutter*
- Mentored & onboarded various teammates on multiple projects, gaining expertise in LLM coding evaluation.
- Assisted with the RLHF training of **Google Gemini's** external API capabilities for the [trip planning](#) feature

### Senior Software Engineer – Capital One

Toronto, ON | Nov. 2019 – Sep. 2022

- Analyzed 95 Fraud & Dispute case states with currency conversion issues, then designed full-scale solutions & presented to 4 teams to get approvals to implement the solutions, leading to reduced losses by **\$2M+ / year**
- Applied for the [Scientific Research \(SR&ED\) Tax Incentive](#) worth **\$300K+** for the currency conversion work
- Led the ownership transfer of my team's *AWS* container, providing many documents & several KT sessions
- Led the Foreign Transaction Fee Enhancement project to cut operational losses by over **\$1.5M+ / year**
- Developed scalable **ECS** clusters on **AWS** to host several containers by integrating with their **CI/CD** pipelines
- Documented the process for deploying & testing containers to the cloud, & debugging deployment errors
- Collaborated on developing multiple features & **REST APIs** throughout **10+ Java Spring Boot microservices**
- Helped migrate the Customer Management Application to a **micro-frontend/services architecture** platform
- Participated in 3 internal hackathons, achieving **1st** overall in one, & receiving multiple awards in the others

## PROJECTS

- Building [Beneficent Relief's](#) donation money tracking transparency system Jun. 2024
- Built a [Flappy Birds replica](#) using *Godot, GDScript & Python* and deployed it on *Android* Feb. 2023
- [Chessmate](#): Led a team of 6 to build a **SCARA robot that plays chess** (ML, OpenCV, AWS) Apr. 2019
- [EyeSee](#): Headset for the partially sighted - Won **first place** in the **VR/AR** category at [Hack Princeton](#) Apr. 2017

## EDUCATION

### McMaster University – Bachelor of Engineering

Hamilton, ON | June 2019

Mechatronics Engineering & Co-op (*Software focus*)

## CERTIFICATIONS

- **AWS Solutions Architect** Associate Certification ([XC19TDELS1F11YCR](#)) Dec. 2023

## SKILLS

**Languages:** Python, C++, Java, JavaScript, TypeScript, Rust

**Libraries/Frameworks:** PyTorch, React, OpenCV, Flask, Django, Tensor Flow, Spring Boot, Next.js, Vue.js, JQuery

**Technologies:** Kubernetes, Docker, CUDA, Triton, AWS, PostgreSQL, MySQL