Sama Al-Oda

+1 (647) 891-7557 | alodas@mcmaster.ca | LinkedIn | Portfolio | GitHub

Education

McMaster University May 2028
Bachelor of Software Engineering, Double Major with Biomedical Engineering – GPA: 3.96

Experience

Machine Learning Engineering Intern (CyberDome / R&D) May 2026 – Aug 2026
Nokia | *Python, Kubernetes, Docker, Helm, Jenkins, Grafana* Ottawa, ON

- Developed **ML-driven anomaly detection** services for Nokia NetGuard Endpoint Detection and Response (NEDR), analyzing endpoint and network telemetry to support enterprise-scale threat detection.
- Built and deployed containerized ML microservices using **Kubernetes, Docker, Podman, and Helm**, enabling scalable model deployment across distributed network environments.
- Implemented **Jenkins and GitLab CI/CD** workflows for automated testing, validation, and deployment while developing Grafana observability dashboards monitoring security analytics across **100,000+ endpoints**.

Machine Learning & Software Developer Intern May 2025 – Apr 2026
Didar Lab / FendX Technologies | *PyTorch, TensorFlow, Swift, AWS, PostgreSQL* Hamilton, ON

- Architected and deployed scalable cloud-based ML applications utilizing **PyTorch and TensorFlow**, engineering robust inference services through AWS-backed REST APIs to consistently achieve **sub-200ms response latency**.
- Fine-tuned advanced transformer-based and computer vision architectures using **Hugging Face**, leveraging large-scale multimodal datasets to significantly enhance the accuracy and reliability of predictive analytical models.
- Engineered robust cross-platform mobile applications for **iOS and Android** environments using **Swift and Gradle**, integrating **CreateML, PostgreSQL, Supabase, and Firebase** to support concurrent multi-user ML workflows.
- Designed and implemented automated **computer vision detection pipelines**, facilitating high-throughput data analysis and accelerating the transition of complex research prototypes into reliable enterprise-grade software solutions.

Publications

Research Publications & Proceedings

- Co-author on applied ML and health technology conference proceedings through **MedT**; contributing author on forthcoming machine learning research with **Didar Lab / FendX Technologies**.

Projects & Hackathons

VALID: Multimodal Predictive AI (CUCAI Responsible AI Award) | *BERT, XGBoost, FastAPI*

- Won the **Responsible AI Award** at CUCAI 2026 for leading a team of 10 to develop a multimodal ML framework for advanced decision support, achieving **91% precision** and **88% macro-recall** on complex datasets of over **120,000 unstructured text records**.
- Architected a high-performance NLP pipeline using a **BERT-based transformer model** for dynamic semantic label extraction, deploying the ensemble model (**XGBoost, MLP, Random Forest**) via a **FastAPI** RESTful gateway.

X-rAI: Computer Vision Fracture Platform | *TensorFlow, React.js, Flask, AWS*

- Developed a **TensorFlow-based computer vision model** trained on large-scale image datasets, iteratively evaluated, and deployed inference pipelines via an **AWS S3 backend**.
- Built the web platform end-to-end, implementing a **React.js frontend** and **Python Flask API** backend, featuring an integrated **LLaMA-powered chatbot** for automated report generation.

Technical Skills

Machine Learning: PyTorch, TensorFlow, Keras, Hugging Face, BERT, XGBoost, Scikit-learn, OpenCV, CreateML
Languages: Python, Swift, Java, JavaScript, TypeScript, SQL, C/C++, Bash
Data & Cloud: PostgreSQL, AWS (S3, EC2), Supabase, Firebase
Software: FastAPI, Flask, React.js, Node.js, Spring Boot, Git, Linux
Infrastructure: Kubernetes, Docker, Podman, Helm, Jenkins, GitLab CI/CD, Grafana