

# MAHSHID ALINOORI

## Machine Learning Engineer

Toronto, ON, Canada | Email | LinkedIn | GitHub | Google Scholar | Website

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Machine Learning Engineer with 4+ years of experience turning applied AI research into production systems, evaluation workflows, and reusable ML infrastructure. Strengths include LLM applications, agentic AI evaluation, foundation models, cloud deployment, synthetic data generation, and privacy-preserving machine learning.

### CORE STRENGTHS

- **Production AI:** Led LLM analytics and reporting systems from architecture through secure deployment and adoption.
- **Evaluation & Governance:** Built benchmarks for agent reliability, observability, explainability, and failure analysis.
- **Research Engineering:** Implemented training, data processing, and evaluation pipelines for foundation models.
- **Technical Enablement:** Created bootcamps and reference implementations for 30-40 industry teams per cohort.

### SKILLS

**Programming:** Python, SQL, Java, JavaScript, C/C++

**AI / Machine Learning:** PyTorch, Hugging Face Transformers, LLMs, Generative AI, Retrieval-Augmented Generation (RAG), Agentic AI, Foundation Models, Deep Learning, Self-Supervised Learning, Recommender Systems, Multimodal AI, Synthetic Data Generation, Differential Privacy

**LLM & Evaluation:** OpenAI, Azure OpenAI, CrewAI, DeepEval, Opik, AI Evaluation, Agent Evaluation, Benchmark Design, Explainable AI (XAI)

**MLOps & Infrastructure:** Docker, Kubernetes, Azure, Terraform, CI/CD, GitHub Actions, MLflow, Weights & Biases, vLLM, Linux

**Backend & Data:** FastAPI, REST APIs, PostgreSQL, MongoDB, Pinecone, ChromaDB

### EXPERIENCE

**Applied ML Specialist (Intern to Associate to Applied ML Specialist)** | Vector Institute | Toronto, Canada | Jan 2022 - Present

- **LLM platform delivery:** Led a thematic analysis and reporting platform for a major mental health organization, including Azure infrastructure, secure deployment, automated reports, and Tableau analytics.
- **Agent evaluation:** Built benchmarking workflows with OpenAI, Azure OpenAI, CrewAI, DeepEval, and Opik to assess reliability, observability, explainability, and failure modes.
- **Foundation models:** Co-developed EHRMamba for long-context electronic health records, contributing data pipelines, training infrastructure, experiments, and evaluation systems.
- **Open-source ML:** Contributed to CyclOps with healthcare ML data pipelines, evaluation workflows, experimentation tools, and applied ML examples.
- **Technical enablement:** Delivered advanced bootcamps and reproducible implementations for RAG, multimodal AI, recommender systems, synthetic data, differential privacy, and foundation models.
- **Challenge operations:** Supported the MIDST Challenge at SaTML 2025 across design, evaluation methodology, participant review, and operations, attracting 700+ submissions.

**Co-Founder & Chief Innovation Officer** | Echolair | Apr 2023 - Jan 2024

- **Product strategy:** Co-founded a generative audio startup for music creators and led technical strategy, AI system design, MVP development, and research-to-product translation.
- **Market validation:** Led customer discovery, partner conversations, accelerator work, roadmap planning, and product-market fit exploration.

## **Backend Developer** | Papion Software Group | Jun 2017 - Mar 2018

- **Backend services:** Developed REST APIs and authentication/object-storage microservices for a social platform serving more than one million users.

## **SELECTED PUBLICATIONS**

- Music-STAR: A Style Translation System for Audio-based Re-instrumentation (First Author), ISMIR 2022.
- EHRMamba: Towards Generalizable and Scalable Foundation Models for Electronic Health Records, ML4H @ NeurIPS 2024.
- From Features to Actions: Explainability in Traditional and Agentic AI Systems.
- Transparency in Agentic AI: A Survey of Interpretability, Explainability, and Governance.

## **EDUCATION**

### **M.Sc. Computer Science** | York University | Toronto, Canada

Thesis: Music-STAR: Audio-Based Multi-Instrument Music Style Translation.

### **B.Sc. Computer Engineering** | Amirkabir University of Technology

Graduated ranked 1st among hardware engineering students.