

# AMIR TAVASOLI

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## Executive Summary

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Director-level ML Engineering & Infrastructure leader with 10+ years building and scaling production ML platforms across retail and fintech. Deep expertise in platform reliability, cost optimization, and high-throughput ML pipelines serving millions of users. Signature outcomes include **75% cloud-cost reduction**, **95% pipeline-failure reduction**, **4x throughput growth**, and real-time personalization infrastructure at **16M-customer scale**. Proven ability to lead cross-functional ML engineering teams delivering model serving, training pipelines, and feature infrastructure at enterprise scale.

## Core Competencies

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ML Platform & Infrastructure • Model Serving & Training Pipelines • Feature Stores & Data Infrastructure • MLOps & CI/CD for ML • Production Reliability & Scalability • Cloud Cost Optimization • Distributed Systems • Real-Time Personalization • Cross-Functional Engineering Leadership

## Professional Experience

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### Sobeys Inc. (Empire Company Ltd.)

Feb 2024 – Present

*Director of Data Science, Marketing*

*Toronto, ON*

- Own end-to-end ML architecture for marketing and loyalty: data pipelines, model lifecycle, deployment infrastructure, experimentation frameworks, and production monitoring.
- Lead **Agentic AI for Offer Creation**: designed and deployed context-aware ML system for automated offer generation, reducing manual planning effort and accelerating production deployment cycles.
- Architect decision-support platform integrating Marketing Mix Modeling outputs with automated channel-allocation recommendations for leadership.
- Drive ML infrastructure programs across churn prediction, personalized pricing, and customer segmentation serving multiple production channels.

*Data Science Manager, Personalization*

*Jul 2021 – Feb 2024*

- Re-architected ML platform and MLOps operations to deliver **75% lower cloud cost**, **95% fewer pipeline failures**, and **4x throughput** — transforming infrastructure reliability and scalability.
- Led a **15-person** engineering team (onshore/offshore) operating weekly omni-channel personalization pipelines at **16M-customer scale** across distributed cloud infrastructure.
- Owned production recommendation lifecycle: enterprise data extraction, feature engineering, model training, serving, and deployment across email, web, and app channels.
- Implemented Bayesian experimentation framework and automated test-design tooling to strengthen measurement rigor and accelerate iteration cycles.

### Paytm Labs

Jun 2021 – Jul 2021

*Technical Lead, Machine Learning*

*Toronto, ON*

- Led ML engineering delivery for personalization and growth platforms; managed sprint planning, cross-team requirement translation, and production release coordination.

*Senior Machine Learning Engineer*

*Jul 2020 – Jun 2021*

- Built scalable production ML systems for recommendation and campaign optimization, including distributed training pipelines and real-time serving infrastructure.
- Developed analytics and monitoring tooling for ML system health, latency tracking, and leadership visibility into model performance.

### Home Depot

Jul 2019 – Jul 2020

*Senior Data Scientist, eCommerce*

*Toronto, ON*

- Developed deep-learning collaborative filtering recommenders (TensorFlow/PyTorch) with production-grade model serving for eCommerce personalization.
- Improved search relevance via NLP-based ranking models, optimizing retrieval latency and precision at scale.

### Canadian Tire Corporation

Mar 2018 – Jun 2019

*Lead Data Scientist*

*Toronto, ON*

- Led end-to-end ML projects in demand forecasting, price optimization, and inventory analytics at enterprise retail scale.
- Designed reusable technical architecture and ML project tooling to accelerate team velocity and standardize model delivery.

*Senior Modeling Analyst*

*Sep 2014 – Mar 2018*

- Delivered predictive models across assortment and forecasting domains using Python, scikit-learn, XGBoost, and time-series methods (SARIMA, Holt-Winters).
- Built data pipelines and model training workflows in distributed environments for large-scale retail datasets.

*Assortment Analyst*

*Jun 2013 – Sep 2014*

- Implemented large-scale fuzzy matching for automotive parts catalogs in distributed computing environments.

## Technology Stack

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**Languages/Data:** Python, PySpark, Scala, SQL, HiveQL

**ML/AI:** TensorFlow, PyTorch, Keras, scikit-learn, Spark ML, Bayesian methods, feature engineering

**Cloud & Infra:** AWS (S3, SageMaker, Redshift, Athena), GCP (BigQuery, Dataproc, Kubeflow), Azure (Databricks, ADLS, DevOps), Kubernetes, Docker

**MLOps & Delivery:** CI/CD for ML, model serving, pipeline orchestration, reliability engineering, cost optimization, distributed systems

## Education

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**McMaster University**

Hamilton, ON

*M.Sc., Computer Science*

*2008 – 2010*

- Thesis: Automated Message Triage using supervised semantic classification for patient-provider messaging.

**Amirkabir University of Technology (Tehran Polytechnic)**

Tehran, Iran

*B.Sc., Computer Science*

*2003 – 2008*

## Publications & Speaking

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*Automatic Message Triage: A Decision Support System for Patient-Provider Messages*, AMCIS 2013.

*A Proposed Intelligent Policy-Based Interface for a Mobile eHealth Environment*, MCETECH 2009.

Invited talk: *Journey of a Data Scientist: Using AI, Machine Learning and Big Data to Solve Retail Problems*, Lakehead University.

## Certifications

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AWS training (Machine Learning Pipeline on AWS; Big Data on AWS) • SAP Certified Associate (Business Foundation and Integration with SAP ERP 6.0 EHP5)