

# AMIR TAVASOLI

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## Experience

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### Sobeys Inc.

Feb 2024 – Current

*Director of Data Science in Marketing*

*Toronto, CA*

- Hands-on architect delivering end-to-end data science and AI solutions across all marketing analytics initiatives, owning the full lifecycle from data ingestion, architecture design, and code review through QA, end-to-end testing, and production deployment.
- Scaled Empire's personalization program to 15M+ customers, tripling effectiveness and online engagement while reducing cloud and FTE operational costs.
- Advanced the personalization program with state-of-the-art models for churn prediction, personalized pricing, customer life stage management, and eCommerce activation to deepen engagement and retention.
- Lead two Agentic AI programs, launched in collaboration with Microsoft and now owned in-house:
  - \* **Offer Creation Agent:** context-aware generation and personalization of campaign-ready offers, reducing manual planning effort and accelerating launch speed.
  - \* **MMM Advisory Agent:** built a production-grade Marketing Mix Modeling framework integrating multi-agency data pipelines and linear mixed models to generate elasticity curves and optimize spend by channel across Empire's banners; then developed an agentic AI layer on top that triggers model runs on demand, applies state-of-the-art optimization algorithms to reallocate spend, and translates results into actionable budget and channel-allocation guidance for business users.
- Lead the buildout of the Retail Media Network (started in collaboration with McKinsey and now owned in-house), enabling partner advertising across Sobeys' digital ecosystem (website, app, and third-party platforms including Meta); build A/B testing pipelines to measure campaign effectiveness and Markov-based multi-touch attribution models to quantify the value of each customer interaction across channels.

*Data Science Manager, Personalization Team*

*Jul 2021 – Feb 2024*

- Led a full-stack ML team of 15 (9 hybrid, 5 offshore), from architecture design (recommendation algorithms, system architecture, and measurement frameworks) with hands-on code review (PySpark and Databricks in an Azure environment) and QA to operationalize personalization platforms that deliver weekly recommendations to 15M+ customers across email, web, and app channels for Empire's banners.
- Scaled the program 4x and optimized algorithms to drive a 10x increase in incremental sales.
- Implemented ML Ops to reduce cloud costs by 75% and pipeline failures by 95%.
- Developed a dynamic A/B testing platform that allows measurement of personalization program running multiple experiments at the same time.
- Partnered with Marketing, Loyalty, and Cloud technology teams, and delivered regular executive reporting on ROI, cloud cost, program health, and roadmap progress (new banners and algorithms).

### Paytm Labs

Jun 2021 – Jul 2021

*Technical Lead – Machine Learning*

*Toronto, CA*

- Split role across hands-on ML engineering (~50%) — building and maintaining production ML solutions listed below — and people management (~50%), leading a team of 6 MLEs within Paytm Labs' core ML team.
- Translated daily business requirements into technical workstreams for the team, planned sprints in JIRA, and delivered executive-level progress reporting aligned to business priorities.

*Senior Machine Learning Engineer*

*Jul 2020 – Jun 2021*

- Built end-to-end and maintained scalable ML solutions in Scala and Python on AWS, serving 100M+ of users across personalized recommendations in the app, personalized dynamic app UI, third-party product advertising within the Paytm app, and marketing campaign optimization.
- Built production data pipelines that cleaned Paytm app log data and transformed it into ML-ready features.
- Developed visualizations and dashboards on a Kubeflow backend for senior leadership reporting.

### Home Depot Corp

Jul 2019 – Jul 2020

*Senior Data Scientist, eCommerce Team*

*Toronto, CA*

- Built recommendation engines using deep learning collaborative filtering techniques in TensorFlow and PyTorch on Google Cloud Platform (GCP), powering site customization, on-site advertising, and email personalization.
- Improved Home Depot's search engine through NLP algorithms for more personalized and accurate result ranking.

- Researched and benchmarked algorithms across recommendation and search domains, partnered with cross-functional teams to automate daily workflows, and collaborated closely with Home Depot’s core Data Science team in Atlanta.

## Canadian Tire Corp

Mar 2018 – Jun 2019

*Lead Data Scientist, Network Performance Data Science Team*

*Toronto, CA*

- Provided technical leadership across Canadian Tire’s store network data science portfolio, including sales forecasting, order optimization, lost sales estimation, space optimization, and price optimization.
- Owned architecture design end-to-end — from initial technical diagrams to reusable tooling including object-oriented Python wrappers, PySpark project scaffolding for SparkML, and ML algorithm optimizers built on DASK and Docker to accelerate team development.
- Managed Agile delivery through JIRA, partnered with business teams across and beyond the organization, and delivered regular project updates to executive level leadership.

*Senior Modeling Analyst, Automotive Data Science Team*

*Sep 2014 – Mar 2018*

- Developed and deployed machine learning models across multiple business lines, including demand forecasting for automotive parts and seasonal categories (children’s pools), cold-start forecasting for newly introduced parts with no sales history, related-item discovery, parts life cycle analysis, and market basket analysis.
- Delivered solutions in IBM SPSS and Python using classical ML techniques — Random Forest, XGBoost, and time series models (SARIMA, Holt-Winters).

*Assortment Analyst, Automotive Data Science Team*

*Jun 2013 – Sep 2014*

- Implemented fuzzy text matching algorithm for matching millions of automotive part numbers in the Hadoop Environment. This work was developed using Map-Reduce programming in Java with Spark back-end.

## Education

### Amirkabir University of Technology (Tehran Polytechnic)

Tehran, IR

*BSc, Computer Science*

*2003 – 2008*

- Average: 17.13 / 20.00, 2nd highest grade in the program.

### McMaster University

Hamilton, CA

*MSc, Computer Science*

*2008 – 2010*

- Thesis topic: *Automated Message Triage: A Proposal for Supervised Semantic Classification of Messages* — uses a combination of various text mining algorithms on messages exchanged between patients and their physicians, implemented in R and Java using LingPipe and Apache Server.
- Supervisor: Dr. Norm Archer.

## Publications and Presentations

**2020** — Tavasoli, A., *Journey of a Data Scientist: Using AI, Machine Learning and Big Data to Solve Problems in the Retail Industry*, Talk at Lakehead University, Thunder Bay, Ontario.

**2013** — Tavasoli, A., Archer, N. P.: *Automatic Message Triage: A Decision Support System for Patient-Provider Messages*, Americas Conference on Information Systems 2013, McMaster University: Hamilton, ON. This paper uses text mining to triage text messages exchanged between patients and their physician.

**2009** — Tavasoli, A., Archer, N. P.: *A Proposed Intelligent Policy-Based Interface for a Mobile eHealth Environment*, Innovation in an Open World. G. Babin, P. Kropf and M. Weiss, Springer Berlin Heidelberg. 26: 246–251. Presented at MCETECH 2009; focused on an adaptable interface for novice users on mobile devices.

**2009** — Presentation of eHealth Integration System using HL7 v3, IBM CASCON Technology Showcase November 2009. Proposed a service-oriented architecture to translate XMLs generated using two health standards.

## Research and Achievements

**February 2021** — Successfully completed AWS training certificate on “The Machine Learning Pipeline on AWS”.

**December 2020** — Successfully completed AWS training certificate on “Big Data on AWS”.

**2007 – 2013** — As a Research Assistant, built a Risk Management Model for Toyota; Teaching Assistant in many courses regarding Information Systems Implementation, SAP, Software and Algorithm Design, and Introduction to Programming.

**May 2013** — SAP Certified, Certification Title: Associate Business Foundation and Integration with SAP ERP 6.0 EHP5 (www.sap.com), Certification ID: 0010024424.

**June 2005** — Qualified for the World Finals in Robotics Contest and Conference RoboCup 2005, Rescue Simulation League, Osaka, Japan.

## Development Skills

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Proficient in Python, PySpark, SQL with experience in Java, R, C/C++/C# and Scala.

- **Cloud Technologies**

- **Databricks:** Spark, Unity Catalog, Mosaic AI, MLFlow, Lakeflow, etc.
- **AWS:** SageMaker, Redshift, Managed Airflow, etc.
- **GCP:** Vertex AI, BigQuery, Dataproc, DataPrep, KubeFlow, etc.
- **Microsoft Azure:** Azure DevOps, AI Foundry, App Service Deployment, etc.

- **Machine Learning & AI:** Python AI/ML Packages (LangChain and LangGraph, TensorFlow, PyTorch, Keras, scikit-learn, PySparkML, ...), NoCode Tools (KNIME, N8N, ...).

- **Programming Languages and Development Tools**

- End-to-end ML/AI tool building using AI tools (Claude Code, Codex, etc.).
- Using Docker for container management, ...