

# Moeen Bagheri

AI Engineer | Toronto, ON, Canada

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## SUMMARY

AI Engineer with 12+ years of experience and a Master of Science in Data Science and Analytics, building production LLM agents. Technical lead for FOX, BASF's AI assistant serving 4000+ users and winner of BASF's 2025 Digital Award. Expertise in LangGraph agent and tool design, evaluation, LLM output grounding, and agentic coding.

## SKILLS

**Concepts:** Agentic Coding, AI Agent Design & Development, Fullstack & API Development, Evaluation & Testing, CI/CD, RAG, Time-Series Forecasting, Finetuning, Transfer Learning, Computer Vision, NLP

**Soft Skills:** Technical Leadership & Mentorship, Stakeholder Communication

**Languages:** Python, SQL, JavaScript, C#, R

**Tools & Frameworks:** LangChain/LangGraph, Databricks, MLflow, DevOps, Docker, Git, PostgreSQL, Pandas, NumPy, PySpark, PyTorch, TensorFlow, LightGBM, Scikit-learn, HuggingFace, OpenAI API, Azure, Flask, FastAPI

## EXPERIENCE

### Senior AI Engineer

Oct 2024 - Present

BASF – Toronto, ON, Canada

Lead Engineer for FOX Talk2Data, BASF's flagship AI data assistant used by 4000+ users. Winner of BASF's 2025 Digital Award.

- **Enterprise AI Assistant:** Technical lead for design and development of **FOX**, BASF's AI assistant serving **4000+** users. Winner of BASF's 2025 **Digital Award**.
- **Natural Language to SQL:** Designed and developed a LangGraph agent that translates natural-language questions into Databricks SQL queries and returns tables and charts, runs deterministic analysis of the data, and answers from unstructured reports using RAG. New data and RAG sources onboard through configuration alone.
- **Grounded Executive Briefing:** Shipped a monthly AI briefing for finance leadership (live since Sep 2026): deterministic SQL finds which KPIs moved and why, the LLM writes only the narrative, and validation rejects unsupported figures. Built on a shared analysis engine that also powers the chat assistant, so both always report the same figures.
- **Dashboard-Aware Chat:** Connected the assistant to the *Power BI* report a user has open, passing the page's metadata from a *React* frontend through a *FastAPI* backend to the agent, so answers reflect the data on screen.
- **Evaluation:** Built an evaluation framework with automated tests that track SQL correctness, tool selection, and latency for each assistant, catching regressions before release.
- **Agentic Coding System:** Built an agentic coding assistant on top of GitHub Copilot and Cursor that autonomously implements features, runs tests, creates pull requests, and reviews code across production repositories. Architected with specialized sub-agents, instructions, skills, and custom prompts, enabling a single engineer to operate with the throughput of a small team.
- **AI Delivery Leadership:** Co-owner of the Forward Deployed Engineering and Delivery Acceleration work package in BASF, which aims to accelerate the delivery of AI-powered features to production.

### Generative AI Engineer

Sep 2023 - Oct 2024

YT Copilot – Toronto, ON, Canada

Developed a Chrome extension using Generative AI to enhance YouTube experience.

- **YouTube LLM Agent:** Developed a Chrome extension that skips promotional segments, summarizes videos, and enables semantic search over YouTube content using an agentic LLM. Used a MapReduce-style chunking and aggregation pipeline to efficiently handle LLM context limitations for long YouTube videos.
- **Fullstack Development:** Built a *JavaScript*-based frontend integrated with YouTube's UI and deployed a *Flask* / *PostgreSQL* backend on *Azure Kubernetes Service (AKS)* with *Docker*, plus *Ory Kratos* authentication and *Stripe* billing.

### Machine Learning Engineer

Oct 2021 - Jul 2023

Super GeoAI Technology Inc. – Toronto, ON, Canada

Led team of 7+ engineers developing computer vision models for agriculture.

- **Computer Vision:** Led 7+ engineers to develop object detection models using *PyTorch/TensorFlow* for seed grading and crop yield estimation from phone/drone images, improving efficiency for agricultural partners by over **80%**.
- **Model Enhancement:** Applied transfer learning (*COCO* and *Pascal VOC*) and performed hyperparameter optimization (*Ray Tune*), improving accuracy by **10%** for seed grading and **15%** for wheat head detection.

### Machine Learning Engineer

Jul 2021 - Jan 2022

IBM – Toronto, ON, Canada

Used NLP to identify conflicting or duplicated entries in SRS documents.

- **NLP:** Built and optimized *BERT*-based models in *PyTorch* and *HuggingFace* to detect conflicting and duplicate requirements in software specification documents, improving F1-score by **20%** through transfer learning.

**Instructor - Practical Deep Learning (CIND850)**

Sep 2021 - Dec 2021

*Ryerson University – Toronto, ON, Canada*

Mentored 20+ graduate students on applied deep learning projects.

- **Mentorship:** Delivered lectures and tutorials on core deep learning concepts. Mentored 20+ graduate students on applied deep learning projects, reviewing model architectures.

**Quantitative Data Scientist**

Jun 2014 - Aug 2019

*Electronica AI – Toronto, ON, Canada*

Designed and implemented high-frequency trading algorithms with daily order flow of \$10M+.

- **Trading Algorithm Development:** Collaborated with 5+ engineers to design and implement high-frequency trading algorithms with a daily order flow of \$10M+, leveraging machine learning to improve predictive accuracy.

**EDUCATION**

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**Ryerson University** – *Master of Science*

Sep 2018 - Aug 2020

Data Science and Analytics – Toronto, ON, Canada

**GPA: 4.33/4.33****University of Toronto** – *Honours Bachelor of Science*

Sep 2013 - Jun 2017

Bioinformatics (Specialist), Computer Science (Major) – Toronto, ON, Canada

Graduated with high distinction; University of Toronto Scholar Award