

Abhiraj Singh

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EDUCATION

University of Toronto

Toronto, Ontario

Honors Bachelor of Science

September 2022 – present (will graduate in December 2026)

- **Double major:** Statistics and Mathematics
- **Courses:** Machine Learning and Data Mining, Time Series Analysis, Regression Analysis, Data Analytics, Probability, Number Theory, Computer Science 2, Linear Algebra, Discrete Mathematics, Multivariable calculus, Programming and Optimization

PROFESSIONAL EXPERIENCE

EQ Bank

Toronto, Ontario

Artificial Intelligence Intern

June 2026 – August 2026

- Architected an end-to-end agentic AI mortgage origination platform using Python, TypeScript, Azure OpenAI, Azure AI Document Intelligence, and Playwright, automating ~60% of the mortgage workflow.
- Engineered a multimodal document intelligence pipeline combining OCR/layout parsing, structured LLM extraction, deterministic validation, and human-in-the-loop review across 60+ document types.
- Developed an agentic underwriting engine orchestrating 500+ financial, policy, and compliance checks across income, assets, credit, LTV, pricing, appraisals, and mortgage conditions.
- Built a TypeScript mortgage officer workspace with REST APIs, persistent workflow state, evidence-grounded outputs, and page-level source traceability, reducing manual review time by ~40%.
- Automated broker licensing checks, credit bureau screening, maximum LTV, pricing matrices, and finder's fee calculations through specialized tool-calling underwriting agents.

Medcan

Toronto, Ontario

Data Science Intern (AI & ML)

May 2025 – August 2025

- Built an end-to-end resume screener using SentenceTransformers embeddings for cosine vector similarity and CrossEncoder reranker; using Streamlit, Docker and Azure to deploy. Designed and analysed an A/B test for the resume screener which showed a 90% faster screening and 8x increase in number of resumes reviewed.
- Built an LLM content AI Agent using retrieval-augmented generation (RAG), prompt chaining, guardrails, and a Teams to SharePoint publishing flow; delivered 60+ assets/month, 50% faster content cycles and saved more than 12 hours per week.
- Built a demand-forecasting system using ExtraTrees with time-series cross-validation, isotonic calibration, and engineered features; implemented MLOps using Azure Synapse, Azure SQL, PySpark, Power BI, which resulted in 20% fewer staffing gaps and faster weekly capacity planning, boosting client operational efficiency by 15%.
- Developed an on-prem speech recognition application using OpenAI Whisper, Flask, and Docker, generating transcripts in minutes and saving 12+ hours/week.

Statellect

Punjab, India

Co-Founder

January 2022 – August 2022

- Founded a data analytics firm to serve healthcare institutions and diverse clientele.
- Designed and implemented robust data pipelines for structured data processing, reducing data processing times.

PROJECTS

AI Syllabus Planner (calMOG)

- Built a full-stack AI academic planning app using Next.js, TypeScript, Tailwind, Supabase, and OpenAI API to extract deadlines, grading items, and course policies from uploaded syllabus PDFs.
- Implemented protected authentication, database-backed course/assessment management, calendar views, PDF upload flow, and AI review workflow for adding extracted deadlines to a student calendar.

Image Classifier Using Deep Learning

- Built a CNN-based dog breed image classifier using TensorFlow, transfer learning, EfficientNet, TensorFlow Hub, and Google Colab, with image preprocessing and data augmentation for 120-class classification.

Machine Learning Projects

- Developed housing price prediction and heart disease classification models using Random Forest, XGBoost, Logistic Regression, KNN, and Decision Trees, with data preprocessing, feature engineering, hyperparameter tuning via GridSearchCV/RandomizedSearchCV, and evaluation using regression and classification metrics.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Java, SQL, R

AI/ML: Azure OpenAI, Azure AI Document Intelligence, PyTorch, TensorFlow, Hugging Face, SentenceTransformers, RAG, Scikit-learn, XGBoost

Engineering: Azure, Docker, FastAPI, Redis, REST APIs, Playwright, Next.js, Supabase, Git, PySpark, Power BI, Flask, Streamlit