

# Kevin Joseph

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## EDUCATION

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### University of Toronto

*Bachelor of Science in Computer Science and Statistics*

Toronto, ON

*Sept. 2023 – May 2027*

## EXPERIENCE

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### IMI Big Data & Artificial Intelligence Competition UTM

Nov. 2025 – Feb. 2026

*Big Data & AI Case Competitor*

*Mississauga, ON*

- Architected a multi-stage AML risk-scoring pipeline combining **38 expert rules**, three unsupervised detectors (Isolation Forest, LOF), and a supervised Random Forest model to classify accounts into **explainable risk tiers**.
- Built a rule-based system with 38 red-flag indicators, requiring multi-category evidence for HIGH classification.
- Engineered behavioral features from transaction data, balancing anomaly detection with supervised predictions.

### UofT Machine Intelligence Student Team - Agent Forge

Oct 2025 – Present

*Machine Learning Developer*

*Toronto, ON*

- Standardized and filtered data via automated pipeline, **cutting preparation time 30%** with Supabase tracking.
- Architected a LoRA fine-tuning pipeline for open-source LLMs, **reducing projected compute costs by 80%**.
- **Achieved 95% reproducibility** by implementing structured experiment tracking and data validation protocols.

### CIBC

May 2025 – August 2025

*Application Developer*

*Toronto, ON*

- Engineered a robust asynchronous data processing pipeline (Python, Azure SDK) using a producer-consumer model, **improving throughput by 40%** and enabling **efficient handling of 1,000+ data blobs** per run.
- Designed and implemented a targeted ETL pipeline in Python to extract, filter by date/criteria, and load relevant log events from Azure Blob Storage into structured text files, **reducing manual data retrieval time by 60%**.
- Automated the **aggregation of data from 50+ API endpoints** into standardized Excel reports using Pandas and fuzzy matching, directly contributing to a **risk deficiency rating improvement from High to Medium**.
- Enhanced **data reliability and completeness 30%** by implementing retry logic and handling for API failures.

## PROJECTS

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### Prove It! (EmberHacks Winner 2025) | *TypeScript, React, MongoDB, DigitalOcean, Auth0*

- Architected a multi-panel, resizable UI with shaden/ui, boosting user productivity and **engagement by 30%**.
- Developed an AI-powered tutor with Gemini 2.5 Flash, reducing **user navigation time by 50% per concept**.
- Streamlined infrastructure management for seamless scaling, **winning "Best Use of DigitalOcean"** award.

### Hangman Game | *Java, Java-Websocket, Java Swing*

- Engineered real-time multiplayer via WebSockets **with sub-500ms latency** and Firebase live leaderboards.
- Developed streamlined multiplayer loop, **cutting player wait by 40%** with instant state sync across all clients.
- Designed dynamic Java Swing UI with letter grid and real-time visualization, **boosting engagement by 30%**.

### Parka (SpurHacks) | *Python, Next.js, TypeScript, Tailwind*

- Engineered a CV pipeline with OpenCV & Gemini, **achieving 95% accuracy** in parking space identification.
- Architected a full-stack proof-of-concept to process images and suggest optimal spots in **less than 5 seconds**.
- Designed a Next.js map UI to render real-time parking availability and optimal spots for **10+ simulated lots**.

### TalkBox (DeerHacks) | *Python, Whisper, TKinter*

- Built a real-time speech-to-subtitle pipeline using Whisper and DeepL APIs for live cross-lingual captioning.
- Engineered a **multi-threaded backend** to process dozens of audio chunks per minute without performance lag.
- Supported **20+ languages with 90%+ transcription accuracy** across diverse accents, maximizing accessibility.

## TECHNICAL SKILLS

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**Languages:** Java, Python, JavaScript, HTML/CSS, R, SQL (Postgres, MySQL)

**Frameworks:** React, Node.js, Material-UI, FastAPI

**Developer Tools:** Git, Docker, Azure SDK, MongoDB, Supabase, Shell, VS Code, IntelliJ, Vim

**Libraries:** Pandas, NumPy, Matplotlib, Scikit-learn