MIKHAI WILSON

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EDUCATION

Western University   **September 2025 - May 2028**

Bachelor's, Mathematics, Computer Science, Philosophy

- Object Oriented Programming (Java), Intro to Python, Machine Learning, Probability and Statistics I & II, Linear Algebra I & II, Calculus with Real Analysis, University Essay Writing, Discrete Math, Calculus II & III, Intro to Math Proofs

PROFESSIONAL EXPERIENCE

Bruce Power   **Tiverton, ON, Canada**

Data Engineer - Python, VBA, Azure REST, SQL, PowerBI, JavaScript   *May 2025 - January 2026*

- Spearheaded migration from VBA Microsoft access database to SQL database and built ETL pipelines for 35,000+ nuclear licensing documents, developing custom JS/TS front-end validation tools to ensure data consistency; achieved a 95%+ reduction in query latency, moving retrieval times from minutes to seconds.
- Built an automated ingestion tool using Python (OpenCV, spaCy) and GPT4 to parse 40,000+ legacy records dating back to 1990~; eliminating 8+ hours of manual review for the licensing team.
- Built Power BI dashboards for CNSC audit workflows using Python/R scripts, DAX, Microsoft SQL, and Row-Level Security; automated Dev/Test/Prod deployments via Azure REST API CI/C/.

PROJECTS & OUTSIDE EXPERIENCE

DLICIO (50+ Restaurants in Kitchener/Waterloo)

Python, Kafka, NumPy, Pytorch, AWS, React Native

- Engineered CraveMatch, a short-form video dish recommender using a two-stage ranking architecture (ANN candidate generation with user–item embeddings from implicit feedback; LambdaMART/LightGBM ranker with contextual features), video/audio content embeddings (CLIP/ResNet), contextual bandit exploration, real-time event streaming (Kafka), a feature store (Feast), and low-latency serving (Kubernetes + gRPC + Redis).
- Conducted onboarding with local restaurants in Waterloo region.
- *Link to Project*

Buildo (Best Use of Google Gemini @ HackConcordia 2026)

Flask, Next.js, Pydantic, RESTful, Gemini, MongoDB, Selenium

- Architected a recursive video generation engine using Veo 3.1 that generates assembly clips in parallel for each step and concatenates them post-processing; this step-by-step isolation successfully eliminated AI hallucination in complex hardware visualizations.
- Designed a microservices backend using Flask, separating the main API from the image/video generation services to enable independent scaling and fault tolerance via a custom request queuing system.
- Developed a high-performance scraping engine using Selenium and Beautiful Soup that processed 36,000+ AliExpress products into a curated 7,000+ item MongoDB catalog, implementing fuzzy search algorithms for real-time parts matching.
- *Link to Project*

Presense (Best Startup @ SpurHacks 2025)

GPT 4, Tensorflow.js, WebRTC, TypeScript, FastAPI

- Developed a real-time communication-coach that measures eye contact, pacing, filler words, facial engagement, and speaking cadence using WebRTC, MediaPipe, and TensorFlow.js model running fully client-side.
- Implemented a FastAPI backend integrating GPT-4o and Gemini for high-fidelity verbatim transcription and semantic speech analysis, achieving <250 ms transcription latency in end-to-end tests.
- *Link to Project*

Maple Swapper (200+ Users)

Gemini, TypeScript, Supabase, FastAPI

- Full-stack web app that scans a user's grocery list and automatically generates a Canadian-made alternatives.
- Vector-based product retrieval system using embeddings + chunking, increasing product-match accuracy to ~92% and reducing LLM hallucinations by 40% across tests.

Skills: Python (Pandas, NumPy, Scikit-learn), JavaScript/TypeScript, Java, SQL, R, VBA, HTML/CSS, XML, JSON, RESTful APIs, AI Agents, OpenAI API, Gemini API, PyTorch, TensorFlow.js, Computer Vision (OpenCV, MediaPipe), NLP (spaCy), Reinforcement Learning (Contextual Bandits), Embeddings & Vector Search, ETL Pipelines, Apache Kafka, Redis, Web Scraping, FastAPI, Flask, Node.js, Docker, Kubernetes, Microsoft Azure AWS, Microsoft SQL Server, MongoDB, Power BI (DAX, Row-Level Security), Data Visualization, Statistical Analysis, Validation Frameworks.