

Tanay Jagadeesh

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Education

University of Waterloo

Bachelor of Applied Science in Management Engineering (Software/Industrial Equivalent)

Waterloo, ON

Sep 2025 – May 2030

Experience

Founding Engineer, Hands AI | TypeScript, PostgreSQL, Python, SupaBase, LLM Backend, Data and ML Infrastructure

Toronto, ON

Sep 2025 – Dec 2025

- Built production RAG pipelines using Ollama embeddings and vector search to deliver personalized recommendations to **250+ signup users** across **500+ recipes**
- Architected production PostgreSQL + Supabase backend for Hands AI's RAG workflows, implementing row-level security and supporting **3,000+ transactional writes** with reliable consistency guarantees
- Fixed critical signup and shopping-cart reliability and data-leakage risks by engineering concurrency-safe TypeScript services across normalized transactional schemas

Data Engineer, Sephira Institute | Python, SQL, FastAPI, PostgreSQL, ETL, LLM APIs ML & Analytics Platform Development

Remote

Dec 2025 – Present

- Built LLM-powered analytics pipelines integrating OpenAI APIs with time-series sentiment datasets across **20+ countries**, enabling automated chart generation and data source attribution
- Engineered automated data ingestion pipelines from **3 external APIs** (Google Trends, YouTube, Spotify) with anomaly detection and failure recovery for daily updates
- Implemented **5+ query guardrails** and content filtering to prevent data reconstruction and ensure compliance

Projects

Canadian Tech Job Market Analytics Platform | Python, PostgreSQL, Streamlit, pandas, Plotly

Dec 2025

- Engineered automated ETL pipelines ingesting **1500+ job postings** into PostgreSQL star-schema warehouses and running **6 analytical SQL models** (CTEs, window functions, percentiles) to compute real-time skill demand and salary benchmarks across **17 companies**
- Built a **4-page interactive Streamlit BI dashboard** with Plotly visualizations, dynamic filtering, and co-occurrence heatmaps analyzing **10+ job titles** and **8 core skills**
- Implemented scheduled refresh and analytics workflows generating **daily market trend updates**, salary estimates for **10+ roles**, and **19 unique skill-pair insights**, revealing SQL in **84%** of data engineering roles

Code Clash, Real-Time Competitive Coding Platform | Next.js, Supabase, WebSockets

Jan 2026

- Built a real-time 1v1 competitive coding platform with WebSocket matchmaking, opponent tracking, and synchronized match state serving **500+ registered users**
- Designed concurrency-safe PostgreSQL schemas with triggers, functions, and RLS policies to persist **4,000+ match sessions** across normalized tables
- Designed and implemented real-time ranking and matchmaking pipelines computing win rates, Elo-style ratings, streaks, and percentiles across **1,200+ competitive problem attempts**

Signature Forgery Detection System | Python, PyTorch, torchvision, CNN, scikit-learn

Jan 2026

- Built a CNN-based signature verification model achieving **81% accuracy** detecting forged signatures across **6000+ images** using transfer learning with ResNet-18 and a custom classification head
- Implemented data augmentation pipelines (rotation, scaling, Gaussian noise) and preprocessing to handle real-world signature variation, improving model robustness by **12%**
- Evaluated model performance using ROC-AUC (**0.94**) and confusion matrix analysis, optimizing decision thresholds to minimize false negatives for fraud prevention use cases

Technical Skills

Programming & Backend: Python, SQL, TypeScript, JavaScript, HTML/CSS, FastAPI, WebSockets, Git

Data Engineering & Analytics: Azure, Databricks, Apache Spark (PySpark), Delta Lake, PostgreSQL, Supabase, ETL Pipelines, Star-Schema Warehousing, CTEs, Window Functions, Streamlit

Machine Learning & Analytics: PyTorch, scikit-learn, XGBoost, Transfer Learning, pandas, NumPy, Matplotlib