**Jay Navnitbhai Patel**

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Professional Summary

Innovative IT Developer with **3 years of Canadian banking experience at TD Bank,** specializing in **AI and automation development**. Led end-to-end delivery of AI-driven solutions, from designing proof-of-concepts to deploying full-scale production systems. Proven ability to align innovative technologies with business goals.

Skills

**AI & Machine Learning:**  
LLMs (GPT, Claude, Gemini), LangChain, LangGraph, Prompt Engineering, RAG, AI Agents, Transfer Learning, CNN, RNN, Transformers, Forecasting, Reinforcement Learning, Scikit-learn, TensorFlow, Hugging Face, Model Evaluation & Metrics, REST APIs

**Automation & Data Engineering:**ETL Pipelines, Data Wrangling, Scripting (Python, Bash), CI/CD, Git, Docker, Kubernetes, Apache Airflow, MCP, VBA Automation

**Data & Cloud Platforms:**  
Azure (OpenAI, AI Services, Synapse, Data Factory), Databricks, Spark, Hadoop, Kafka, Power BI, Tableau, Excel (Advanced, Pivot, Macros), SQL (MySQL, PostgreSQL), NoSQL (MongoDB)

**Programming & Analysis**:  
Python, R, Bash, SQL, LangChain, LangGraph, React, Angular

Work Experience

**IT Developer, TD Bank, Canada**Sept 2022-Present

* **AI-Powered Mainframe Code Analyzer**  
  **Technology:** Azure OpenAI, LangChain, Retrieval-Augmented Generation, FastAPI, React, FAISS  
  **What I Did:**  
  • Led development of an LLM-based tool to analyze COBOL code using RAG architecture with LangChain and OpenAI.  
  • Built full-stack solution with a React UI and FastAPI backend, enabling users to retrieve human-readable summaries of legacy logic.  
  **Result:** Reduced COBOL code understanding time from 3–5 days to under 5 minutes; tool adopted by 3+ modernization teams and showcased at TD’s internal Tech Festival.
* **LLM-Based Data Lineage Automation**  
  **Technology:** LangChain, Azure OpenAI, FAISS, React, Python  
  **What I Did:**  
  • Created an LLM-powered metadata mapping engine to connect Oracle and TD internal data systems using semantic similarity.  
  • Added Human-in-the-Loop functionality to improve model accuracy through real-time user feedback.  
  **Result:** Improved efficiency by reducing manual efforts by 40% and received approval to transition from POC to enterprise production deployment.
* **“Lawyer Me” – Contract Deviation Detector**  
  **Technology:** Azure OpenAI embeddings, Python APIs, React UI  
  **What I Did:**  
  • Contributed to a contract review tool that compared third-party agreements with TD base contracts using LLM embeddings.  
  • Built deviation detection logic and collaborated with legal teams to refine scoring and reporting.  
  **Result:** Reduced legal review time by over 60% and improved consistency in contract compliance evaluations
* **Chart-of-Accounts Report Migration**  
  **Technology:** Python (pandas, xlwings, openpyxl), VBA  
  **What I Did (Secondary Resource):**  
  • Developed a rule-based Python module to convert legacy COA reports to the new Oracle format.  
  • Integrated the module into existing VBA tools and supported finance operations during rollout.  
  **Result:** Enabled 500+ automated report transformations and ensured reporting continuity across five finance teams during migration
* **EUC Automation for COA Updates**  
  **Technology:** Python (pandas, xlwings, openpyxl), CI/CD  
  **What I Did:**  
  • Led Python scripting of EUC Excel processes impacted by frequent Chart of Account changes.  
  • Collaborated with finance analysts to automate recurring reports with built-in versioning and scheduling.  
  **Result:** Eliminated 70% of manual effort, saving over 15 hours per month for financial analysts and reducing operational risk.

Education

University of Windsor, Windsor, ON, Canada   
Master of Applied Computing

Pandit Deendayal Energy University, Gandhinagar, India   
Bachelor of Technology, Information and Communication Technology

Projects

**Medical RAG-based AI Bot** | *Azure Document intelligence, MongoDB, Large Language Models (LLMs), Streamlit* Nov 2024

* Built a Retrieval-Augmented Generation (RAG) system that answers medical queries from both text input and scanned documents (e.g., prescriptions, lab reports) using an intuitive Streamlit interface.
* Generated semantic embeddings using SentenceTransformer (all-MiniLM-L6-v2) and implemented a custom FAISS retriever to perform similarity search over a curated dataset of real-world medical Q&A from iCliniq.
* Integrated Groq-hosted LLaMA3 and OpenAI GPT-4o models to generate natural, context-aware responses based on retrieved information, offering first-aid tips, symptom explanations, and references to similar past cases.
* Used Azure Document Intelligence’s Read OCR model to extract structured data like key-value pairs and medical tables from scanned documents, enabling document-aware medical assistance.
* Implemented emergency detection and feedback logging, including keyword-based urgency scoring for flagging critical health issues, and stored user interactions in MongoDB Atlas to enable future improvement and learning analytics.

**Weather Data Intelligence |** *Azure Data Factory, Databricks, OpenWeather API, Tableau, Python, R* Sep 2024 – Dec 2024

* Built a scalable weather data pipeline that automated ingestion from OpenWeather API and NCEI historical sources using Azure Data Factory.
* Stored and managed large volumes of raw and processed data in Azure Data Lake Storage (ADLS) with structured partitioning for efficient access.
* Used Azure Databricks to perform data cleaning, transformation, and feature engineering for forecasting models.
* Trained machine learning models in Azure ML Studio to predict future weather trends using time-series data.
* Visualized insights via an interactive Tableau dashboard showcasing real-time weather, trends, and forecasts for actionable decision-making.