Peiqi Hu

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AI Applications & Data Engineer with 2 years of experience supporting enterprise production systems across validation, integration, deployment, migration, and operations in telecommunications. Brings hands-on Python, SQL, REST API, data-processing, testing, and troubleshooting experience, alongside independent projects in LLM/RAG workflows and automated data pipelines. Focused on building reliable, practical AI-enabled applications grounded in traceable data workflows.

TECHNICAL STRENGTHS

Applied AI: LLM applications, RAG concepts, document ingestion, semantic search, embeddings, vector retrieval, prompt design, NLP, Scikit-learn, PyTorch

Data & Backend: Python, SQL, PostgreSQL, MongoDB, REST APIs, ETL pipelines, Apache Airflow, Pandas, NumPy

Engineering & Operations: Git, Docker, CI/CD, integration testing, unit testing, Postman, Linux, Jenkins, Splunk, Elasticsearch, Grafana, Agile, Jira

Cloud & Tools: AWS, Jupyter Notebook, Streamlit, Tableau Public

PROFESSIONAL EXPERIENCE

Technology Specialist - Architecture and Engineering

Bell | May 2022 - July 2024

- Developed Python automation for data extraction, processing, and validation, reducing manual investigation time by **40%** and improving data-quality verification.
- Analyzed and validated large-scale production datasets during system migration and deployment activities, investigating inconsistencies and verifying accuracy across integrated systems.
- Built and maintained SQL queries for data validation, issue investigation, and system-change verification across deployment and migration workflows.
- Performed API, functional, and integration testing to validate service communication, traffic flows, request/response behavior, and release readiness.
- Investigated production issues through logs and monitoring tools, performed root-cause analysis, and documented validation workflows and troubleshooting procedures for operations teams.
- Collaborated with cross-functional teams in an Agile environment to clarify requirements, resolve integration issues, and support production deployments.

SELECTED AI & DATA PROJECTS

ResearchCompass - AI-Powered Research Assistant | Python, LLMs, RAG, Chroma | In progress

- Developing a modular research-assistant workflow for academic document ingestion, semantic search, and AI-assisted research support.
- Designed a document-processing pipeline covering loading, parsing, chunking, embedding generation, and vector-based retrieval.
- Built and tested modular pipeline components with unit and integration tests so workflow stages can be developed and validated independently.

News Trend Analyzer - Automated News Analytics Pipeline | Python, Airflow, Docker, PostgreSQL | 2026

- Designed and implemented an end-to-end ETL pipeline to collect, process, and store news articles for downstream trend analysis.
- Built Python data-processing workflows to clean and transform articles into structured datasets; applied NLP sentiment analysis to identify emerging trends.
- Automated workflows with Airflow and Docker and developed Streamlit dashboards to support analytical decision-making.

EDUCATION & CERTIFICATION

Master of Engineering, Communications and Computer Engineering — University of Toronto, Toronto, Ontario | Jan 2020 - Dec 2021

Bachelor of Engineering, Electrical Engineering (with Distinction) — McMaster University, Hamilton, Ontario | Sept 2015 - Jun 2019

AWS Certified Cloud Practitioner | Nov 2025

Languages: English (Fluent), Mandarin (Native)