Guanli Liu

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Profile

Machine Learning Engineer experienced in standing up end-to-end pipelines—from data contracts to serving APIs—and currently deepening expertise for top-tier teams in Australia/US. I pair strong systems fundamentals with applied research in learned indexes and GenAI.

ML Platform Toolkit

- **Languages & Frameworks:** Python, C++, PyTorch, TensorFlow, JAX (learning), scikit-learn, Ray
- **Pipelines:** Airflow, Kubeflow, Vertex AI, MLflow, Feast/feature stores, dbt, BigQuery
- **Serving:** FastAPI/gRPC services, ONNX/TensorRT optimization, A/B testing harnesses, canary + shadow traffic
- **GenAI:** GPT-4/Claude toolchains, embeddings, vector stores, guardrails, synthetic data generation with diffusion models
- **MLOps:** CI/CD for models, data validation (Great Expectations), drift detection, governance and documentation

Experience

ML Engineer, **nftDb** 2023 – 2024

- Built ingestion + training pipelines for wallet-ranking models (Airflow + BigQuery + PyTorch); reduced retraining time from 6h to 2h.
- Containerized inference endpoints with auto-scaling on GKE; added real-time feature caching and latency SLO alerting.
- Created GenAI wallet-notes service (GPT-4 + internal embeddings) with feedback logging to continually improve prompts.

Postdoctoral ML Engineer, **University of Melbourne** 2019 – Present

- Led engineering for RL-based spatial index models; implemented training loops, evaluation harnesses, and reproducible benchmarks.
- Deployed RAG-enabled query tuner that explains plan regressions; integrated human reviewers and fine-tuning datasets.
- Managed student contributors, code reviews, and infra budgets; automated testing via GitHub Actions.

Software Engineer, **Baidu** 2015 – 2017

- Implemented telemetry + feature flags enabling ML-driven personalization in the InfoFlow messaging platform.
- Collaborated with research teams to integrate on-device models while maintaining Android performance constraints.

Education

PhD, Computer Science (AI for Databases), University of Melbourne 2019 – 2023

M.S., Computer Technology, Northeastern University 2013 – 2015

B.Eng., Software Engineering, Northeastern University 2009 – 2013

Learning & Readiness Plan

- Completing **DeepLearning.AI GenAI**, **MLOps Specialization**, and **CS231n refresh** to align with top-tier ML expectations.

- Building a hands-on project roadmap: retrieval-augmented coding assistant, diffusion fine-tuning on geospatial data, and Rust microservices for low-latency inference.
- Practicing system design + ML interviews weekly, emphasizing data contracts, safety, and responsible AI considerations.

</> Representative Work

- **Learned Index Toolkit (PyTorch/C++).** Released under MIT license; demonstrates RL + transfer learning for storage engines.
- **Coding Linter with GenAI Fixes.** Combines AST analysis, GPT-4 suggestions, and semantic diffing to auto-remediate student code.