Guanli Liu

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Profile

Applied Scientist with a PhD in AI4DB who turns research ideas into measurable product wins. I design learning systems for indexing, ranking, and GenAI workloads, partnering with PM/engineering to ship experiments that matter for users.

Core Strengths

- **Modeling:** RL for systems, gradient boosting, causal inference, embeddings/RAG, Bayesian experimentation
- **Systems:** Python/C++ services, low-latency inference, Kubernetes/GCP, feature stores, observability
- **GenAI:** GPT-4/Claude API integrations, retrieval tuning, eval harnesses, safety/feedback loops
- **Collaboration:** PRD co-writing, XFN roadmaps, mentorship of MS/PhD students, publication-driven storytelling

Experience

Postdoctoral Applied Scientist, **University of Melbourne** 2024 – Present

- Lead scientist for RL-enhanced spatial indexes; shipped auto-tuned cost models that cut analytical query latency 18% on cloud DW benchmarks.
- Built GenAI copilots that summarize optimizer plans and recommend hints; integrated human feedback to improve acceptance by 35%.
- Published in VLDB/ICDE while maintaining production-ready codebases and mentoring student engineers.

Applied Scientist, **nftDb** 2023 – 2024

- Designed ranking/risk models for NFT wallets using graph embeddings + gradient boosting; reduced false positives 25% with calibrated thresholds.
- Delivered GenAI collector briefings (GPT-4 + internal knowledge base) that enabled BD teams to prepare in minutes, adopted across GTM.
- Partnered with engineers to productionize inference endpoints (FastAPI, Vertex AI), add drift monitoring, and iterate via A/B tests.

Software Engineer, **Baidu** 2015 – 2017

- Implemented experimentation hooks and telemetry in the InfoFlow IM platform, unlocking personalization science at scale.
- Co-developed voice assistant modules blending NLP services with Android clients, balancing accuracy vs. latency budgets.

Education

PhD, Computer Science, University of Melbourne 2019 – 2023

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

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

Select Publications & Patents

- **VLDB 2024/2025**: Efficient cost modeling + adaptive layout selection for space-filling curves.
- **ICDE 2023**: Learned spatial indexes with transfer learning; code adopted by multiple research groups.
- Pending patent on GenAI-guided query plan explanation for human-in-the-loop databases.