

Guanli Liu

✉ liuguanli22@gmail.com · ☎ (+61) 450075953 · in Guanli Liu · 🌐 <https://github.com/Liuguanli>

👤 Profile

Builder of large-scale data systems with 8+ years across postdoc research and industry (Baidu, startups). I design cloud-native services, optimize query engines, and ship GenAI-powered features end-to-end. Looking for a **Software Engineer** role where I can own backend architecture, performance, and reliability for data-intensive products.

⚙️ Technical Skills

- **Languages:** Python, Java, C++, Go (reading), Rust (basic); production-quality code reviews & testing
- **Distributed Systems:** gRPC/REST services, event-driven pipelines, message protocols, async job orchestration
- **Databases & Storage:** PostgreSQL internals, MySQL, BigQuery, MongoDB, RocksDB, learned/autotuned indexes
- **Cloud & DevOps:** GCP (GKE, Cloud Run, BigQuery), Docker/K8s, Terraform basics, GitHub Actions, monitoring/alerting
- **GenAI Platforming:** Integrated GPT/Claude APIs, prompt/tooling infra, RAG pipelines, content safety guardrails
- **Quality & Process:** Design docs, OKRs, Agile rituals, on-call playbooks, security/privacy reviews

🎓 Education

PhD in Computer Science, *The University of Melbourne*, Australia (GPA: H1) 2019 – June 2023
M.S. in Computer Technology, *Northeastern University*, China (GPA: 3.5 / Top 10%) 2013 – 2015
B.Eng. in Software Engineering, *Northeastern University*, China (GPA: 3.4 / Top 20%) 2009 – 2013

🐾 Experience

Senior Software/Platform Engineer (Data), nftDb 🌐, Remote/Australia 2023 – 2024

- Architected the NFT intelligence platform (database) end-to-end: ingestion services in **Python/Go**, BigQuery warehouse, feature store, and API layer serving ~5M wallet events/day.
- Built GenAI-assisted wallet notes by combining GPT-4 function-calling with internal graph features; reduced analyst triage time by 40%.
- Deployed ranking microservices (Kubernetes + Cloud Run) implementing PageRank-like scoring, caching, and gRPC interfaces consumed by the web app.

Postdoctoral / Research Software Engineer, University of Melbourne 2019 – Present

- Led engineering for AI4DB projects that shipped RL-enhanced spatial indexes and LLM-assisted query tuning prototypes; codebases in **C++/Python**.
- Delivered production-grade research tooling: reproducible benchmarking infra, CI on GitHub Actions, containerized services on GCP for student teams.
- Built a GenAI reading aide (Node.js, GPT-4, Midjourney) with latency-tolerant queues and observability dashboards used in human-subject studies.

Software Engineer, Baidu, China 2015 – 2017

- Owned core messaging modules for the InfoFlow enterprise IM app (40K+ DAU). Designed backward-compatible message/voice protocols and SDKs.
- Reduced message-store latency 20% by refactoring SQLite schema, writing migration tooling, and instrumenting performance regressions.
- Championed modular UI widgets + Builder-pattern libraries that cut feature rollout time by 30% and improved accessibility compliance.

</> Selected Projects & Publications

- **Learned Spatial Index Toolkit (C++/Python).** Released RL-trained SFC indexes; benchmarked vs. traditional methods (ICDE'23, VLDB'24).
- **Coding Style Linter (Python).** Engineered AST rules + GenAI autofixes for C submissions; adopted in grad-level teaching.
- **ConnectorX contributions.** Optimized data-loading paths and added tracing hooks widely used in SFU DB lab projects.