Xingyu Qu

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Education

Wuhan University, School of Computer Science — *B.Eng. in Computer Science and Technology | Sept 2024 – Present*
GPA: 3.87/4.00 | **Weighted Average:** 91.86/100
Honors: Outstanding Student; Freshman First-Class Freshman Scholarship (Top 5%); Second-Class Scholarship (Top 15%); Advanced Individual in Sunshine Sports
Selected Coursework: Linear Algebra (98), Advanced Mathematics (92), Advanced Programming in C (93), Data Structures (90), Data Management Systems (95)

Research & Project Experience

Research on Hardware-Software Co-Scheduling Algorithms for NPU-Based RAG Systems
Competitive industry research fund (database track) | Mar 2025 – Present

- Conducting research on system-level scheduling optimizations to enhance resource utilization in heterogeneous NPU clusters for Retrieval-Augmented Generation (RAG) systems.
- Independently implemented and benchmarked three scheduling strategies (FCFS, SJF, and Resource-Aware Scheduling) using metrics such as average task completion time and NPU utilization.
- Designed and developed a multi-user RAG system optimization framework.
- Experimental results showed approximately 10% improvement in overall cluster throughput compared with the baseline FCFS strategy.
- Mid-term report was commended by external industry mentors for its rigorous experimental design.

Distributed Database Functionality & Stability Improvements (Open-source Project)
Open-source distributed database program (industry-supported talent training) | Jun 2025 – Sept 2025

- Contributed to an open-source distributed database community project, focusing on version compatibility and high-concurrency performance.
- Identified and resolved a high-concurrency bottleneck in the "one-click upgrade" workflow; the fix was merged into the community release.
- Submitted multiple patches touching the PostgreSQL codebase and expanded deployment documentation for Linux distributions.
- Significantly improved database stability under heavy load.
- Recognized as an open-source contributor in a selective global cohort; received project-level recognition and a task bonus for outstanding contributions.

Research on Object Proxy Databases and Distributed Transactions
Luojia Totem Database Laboratory, Wuhan University | Dec 2024 – Present

- Conducting research on **intelligent database architectures** integrating large language models (LLMs) and RAG systems in collaboration with Huawei and industry partners.
- Performed module-level testing and **performance profiling** using in-house benchmarking tools to identify multi-replica synchronization latency bottlenecks.
- Analyzed and compared state-of-the-art RAG optimization frameworks (e.g., **PipeRAG**, **RAGCache**) across multi-user workloads, producing a comprehensive **technical analysis report**.
- Designed **multi-concurrency data management experiments** under advisor supervision, achieving initial throughput improvements.
- Authored a detailed performance report providing critical data insights for future system optimization.

Campus Leadership & Activities

Minister of Intelligent Development Department, Smart Jia Student Growth Center, Wuhan University | *Jul 2025 – Present*

- Lead the department in **AI-driven campus application development**, including intelligent campus assistants and student service platforms.
- Responsible for **technical planning, task allocation, and code review**, while coordinating between student developers and university administrators.
- Translated functional requirements into implementable technical solutions, demonstrating **strong leadership and collaboration skills**.

Technical Skills

Programming Languages: C/C++, Python (proficient); Java, JavaScript, Rust (familiar)
Frameworks & Tools: Linux, Git, PyTorch, Large Language Models (LLMs), RAG Systems
Database Systems: PostgreSQL, OpenTenBase (kernel-level development experience)
Research Interests: Intelligent Databases, Distributed Systems, NPU Scheduling, LLM-RAG Integration
Languages: English (CET-4, fluent reading and comprehension of technical papers)