YIBO WANG

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☰ EDUCATION

Sichuan University, College of Computer Science   **Sept. 2021 - Jun. 2025**

***B.Eng** in Computer Science (Yuzhang Honors Class, awarded for Top 3%)*   *Sichuan, China*

- ○ Major GPA: 3.85/4   ○ IELTS: 6.5
- ○ Advisor: Prof. Mingjie Tang

☰ PUBLICATIONS

GPTuner: A Manual-Reading Database Tuning System via GPT-Guided Bayesian Optimization 🔗

- ○ Jiale Lao, **Yibo Wang**, Yufei Li, Jianping Wang, Yunjia Zhang, Zhiyuan Chen, Wanghu Chen, Mingjie Tang, Jianguo Wang
- ○ Accepted by **VLDB** 2024

A Demonstration of GPTuner: A GPT-Based Manual-Reading Database Tuning System 🔗

- ○ Jiale Lao, **Yibo Wang**, Yufei Li, Jianping Wang, Yunjia Zhang, Zhiyuan Chen, Wanghu Chen, Yuanchun Zhou, Mingjie Tang, Jianguo Wang
- ○ Accepted by **SIGMOD** 2024

☰ RESEARCH EXPERIENCE

Automatic Optimization of Database with Large Language Model   **Sept. 2023 – Feb. 2024**

Advisors: Prof. Jianguo Wang (Purdue); Prof. Mingjie Tang (SCU)   ***Research Assistant***

- ○ Designed and implemented GPTUNER, a novel manual-reading database tuning system that automatically exploits domain knowledge to enhance the knob tuning process.
- ○ Developed a LLM-based data pipeline, a prompt ensemble algorithm, a workload-aware and training-free knob selection strategy, and a Coarse-to-Fine Bayesian Optimization Framework.
- ○ Evaluated GPTUNER under different benchmarks, metrics and DBMS. It identifies better configurations **16x** faster and achieves **30%** performance improvement over the **best-performing** alternative.
- ○ Outcomes: a research paper accepted by **VLDB** 2024.

LLM-Powered Interactive Tool to Explore and Exploit Domain Insights   **Jan. 2024 – Jan. 2024**

Advisors: Prof. Jianguo Wang (Purdue); Prof. Mingjie Tang (SCU)   ***Research Assistant***

- ○ Engaged users to probe into the ingenious LLM-powered pipeline which refines and unifies heterogeneous knowledge to guide system optimization.
- ○ Unleashed the potential of everyday users, enabling them to delve into the nuances of knob features and maximize the efficiency of their tailored DBMS seamlessly.
- ○ Empowered DBAs to supercharge GPTuner with their priceless tuning expertise expressed in natural language and witness how it can be customized to the Coarse-to-Fine Optimization Framework.
- ○ Outcomes: a demo paper accepted by **SIGMOD** 2024, and an open-source project with more than **3000 views, 200 clones and 50 stars** on GitHub.

Automatic Optimization for Stream Processing Systems   **Aug. 2023 – Sept. 2023**

Advisors: Prof. Mingjie Tang (SCU); Dr. Xiaojun Zhan (AntGroup)   ***Research Asistant***

- ○ Collaborated with AntGroup to develop an automated optimization system for Flink, reducing resource consumption to cope with tight budget while maintaining SLA adherence.
- ○ Proposed a rule-based method to get pod features based on the degree of parallelism of vertexes.
- ○ Implemented an ML-based evaluator to estimate resource utilization of a pod given its features.

☰ SERVICES

Subreviewer of VLDB 2024 and ICDE 2024