Hongbin Zhong

+86 18379727287 rj986215159@outlook.com
github:https://github.com/rjzhb

INTEREST

- Machine Learning Systems(Model Inference, Model Compression, Distributed Training)
- Data-Intensive Systems(Data Analytical Systems, Database Systems)

EDUCATION

Georgia Institute of Technology Aug 2024 - Jun 2029
Ph.D in Computer Science Atlanta

Northeastern University 985 Sep 2020 - Jul 2024
Bachelor in Computer Science China

PUBLICATIONS

[SIGMOD 2024] PECJ: Stream Window Join on Disorder Data Streams with Proactive Error Compensation. Xianzhi Zeng*, Shuhao Zhang(Corresponding author), **Hongbin Zhong**, Hao Zhang, Mian Lu, zhao zheng, Yuqiang Chen

[code] **camera ready**

RESEARCH EXPERIENCE

Columbia University Jul 2023 - Present
Research Assistant New York City, NY
Adviser: *Eugene Wu*

- *FADE Project - Query Explanation (Answering "Why" Made Fast)*
  - **Using Sparse Matrix**: explore and implement how interventions evaluation can be adopted to work with sparse arrays without compromising performance
  - **Avoiding Reading And Writing To Disk:** Optimized the generation of Interventions, significantly reducing disk I/O and allowing most of the required data for the evaluation phase to be directly accessed within the CPP file.
  - **Apply SIMD, MultiThreading Optimizations:** Apply SIMD and MultiThreading to the Evaluation loops of Sparse Matrix data structure.
  - **Benchmarks And Experiments:** Finished numerous benchmarks and completed a significant number of experiments.

Rutgers University Jul 2023 - Sep 2023
Research Assistant New Jersey
Adviser: *Dong Deng*

- *Find similar data text segment between some documents*
  - **Implement Baseline:** <DataPortraits> **[code]**
  - **Implement Baseline(Python to C++):** <SlimPajama> **[code]**
  - **Assisting In Some Running Experiments:** Such as running slimpajama and get results.
  - **Optimizing Parallelization:** Optimize parallelization for group function.

4paradigm Company Jan 2023 - Jul 2023
Research Assistant Singapore

Adviser: ***Mian Lu*** &***Shuhao Zhang***

- **(ML4SYS)** *High-Accuracy Low-Latency Stream Window Join with Out-of-Order Data Arrival, Stream Processing System* **[code]**
  - **Implement Baseline:** ICDE 2016<MutipleWay Sliding Window Stream Join> **[code]**
  - **Finding And Organizing Datasets:** using scripts to process the datasets for subsequent experiments
  - **Help implement Bayesian variational inference** (transformer + Mathematical method)
  - **Optimizing Intra-Window Join:** Optimizing Intra-Window Join using adapative filters.
  - **Assisting In Running Experiments Scripts**: Besides, modifying scripts to enhance the visual representation of experimental data.

INDUSTRY EXPERIENCE

Meituan(Top-tier internet company in China) Apr 2022 - Sep 2022

Software engineer Beijing

- **Meituan's App Short Video project**
- **(I built the majority of the foundation for the entire app)**
  - **Data Transimission:** Developed log->kafka->hive to remotely report user video watching behavior to Kafka and synchronize data to Hive tables for recommendation algorithm training.
  - **User Algorithm And Data Refresh:** Improved user experience in poor network environments or for first-time visitors by pulling various data source videos using *Crane* scheduled task to refresh the data periodically.
  - **Implement user group-based resource access:** Through distributed caching *Cellar,* requiring migration of data from Hive data warehouse to a distributed cache Key-Value database due to significant user base growth.

MAIN COURSES

Advanced Algebra	Probability and Statistics	Analytic Geometry
Mathematical Analysis	Discrete Mathematics	Artificial Intelligence
Data Structure	Operating System	Computer Networks
Database	Computer Architecture	Machine Learning
C++ Programming	Java Programming	Software Engineering
Complication Principle	Algorithm Design and Analysis	Linux System
Assembly Programming	Information Security	Computer Interface

Self-Learning(All experiments are finished):

- CMU 15-445 (Intro to Database by Andy Pavlo)
- MIT 6.S081(Operating system kernel)
- Stanford CS144(implement and optimize TCP protocol) [code]

OTHER

- **Programming language Or Api:** C/C++, CUDA, MPI, OpenMP, Java, Rust, Python
- **Languages**: English(TOEFL 104), Chinese(Native)