

# Zhong Hongbin

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💻 github:https://github.com/rjzhb

## RESEARCH INTEREST

Data Management, Databases System, Stream Processing System, Interactive Data Exploration and Analytics

## EDUCATION

**Northeastern University**

Sep 2020

B.S. in Computer Science;GPA: 3.4

China

## RESEARCH EXPERIENCE

**Columbia University**

Jul 2023 - Present

Undergraduate Research Intern

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**

Jun 2023 - Present

Undergraduate Research Intern

New Jersey

Adviser: [Dong Deng](#)

- *Find similar data text segment between some documents(Data Cleaning)*
  - **Implement Baseline:** [DataPortraits](#) [GITHUB](#)
  - **Implement Baseline(Python to Cpp):** [SlimPajama](#) [GITHUB](#)
  - **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

Undergraduate Research Intern

Singapore

Adviser: [Shuhao Zhang](#)

- *High-Accuracy Low-Latency Stream Window Join with Out-of-Order Data Arrival, Stream Processing System* [GITHUB](#)
  - **Implement Baseline:** [ICDE 2016<MultipleWay Sliding Window Stream Join>](#) [GITHUB](#)
  - **Finding And Organizing Datasets:** using scripts to process the datasets for subsequent experiments
  - **Optimizing Intra-Window Join:** Optimizing Intra-Window Join using Bloom 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**
  - **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.

## 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...*  
*under review*

## OTHER

- **Programming language:** C/C++, Java, Rust, Python, CUDA
- **Languages:** English(TOEFL 97), Chinese(Native)