

# Yuxin Tang

Department of Computer Science  
Rice University  
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## SKILLS

### Programming

Python (PyTorch), C++ (CUDA), Spark

## EDUCATION

Ph.D. Computer Science, Rice University, 2018-2024  
Advisor: Chris Jermaine  
B.S. Computer Science, Shanghai Jiao Tong University, 2014-2018

## RESEARCH AREAS

Distributed Machine Learning, Data Management, Large Language Model, Reinforcement Learning

## WORK EXPERIENCE

**Amazon.com**, *Applied Scientist*, Palo Alto, CA 2025.01–Present

- Design reinforcement learning strategy for over 10T token user behavior data pretraining using async RL framework and improve the general capability on instruction following and common sense reasoning benchmarks.
- Lead data preprocessing and pretraining (annealing) efforts for 7B multilingual instructed LLM, including multi-locale data generation, filtering, reweighting, deduplication and pre-tokenization.

**Bosch Center for Artificial Intelligence (BCAI)**, *Research Intern*, Sunnyvale, CA 2024.05–2024.08

- Work on an algorithmic framework for automatic prompt optimization and prompt tuning with efficient prompt compression algorithm.
- Deploy prompt optimization framework with LLM to help with Bosch’s internal document queries.

**Visa Research**, *Research Intern*, Palo Alto, CA 2023.05–2023.08

- Design algorithms for subgraph pattern discovery within graphs composed of trillion-sized transactions.
- Implement biclique computation framework designed to efficiently handle bipartite graphs that are several orders of magnitude larger.

## PUBLICATION

2026 **Upper-Case-Lower-Case Einstein Notation for Large-Scale Sparse Tensor Computation.**  
Yuxin Tang, Zhiyuan Xin, Zhimin Ding, Xinyu Yao, Daniel Bourgeois, Tirthak Patel, Chris Jermaine.  
*SIGMOD’26*

- 2025 **Test-time Scaling for Mixture-of-Agents.**  
Yuxin Tang, Zhimin Ding, Xinyu Yao, Binhang Yuan, Chris Jermaine.  
*submitted to COLM'25*
- 2025 **CORGI: Coupled Reinforcement Learning for Device Assignment in Non-Blocking Computation Graphs.**  
Xinyu Yao, Daniel Bourgeois, Abhinav Jain, Yuxin Tang, Jiawen Yao, Zhimin Ding, Arlei Silva, Chris Jermaine.  
*ICML'25*
- 2025 **EinDecomp: Decomposition of Declaratively-Specified Machine Learning and Numerical Computations for Parallel Execution.**  
Daniel Bourgeois, Zhimin Ding, Dimitrije Jankov, Jiehui Li, Mahmoud Sleem, Yuxin Tang, Jiawen Yao, Xinyu Yao, Chris Jermaine.  
*VLDB'25*
- 2024 **Relational Computation for Very Large-Scale Machine Learning.**  
Yuxin Tang  
*Ph.D. Thesis*
- 2024 **Monarch: Distributed Butterfly Counting for Large-scale Bipartite Graph.**  
Yuxin Tang, Mangesh Bendre, Mahashweta Das.  
*IEEE Big Data'24*
- 2023 **Soft Prompt Recovers Compressed LLMs, Transferably.**  
Zhaozhuo Xu\*, Zirui Liu\*, Beidi Chen, Shaochen Zhong, Yuxin Tang, Jue Wang, Kaixiong Zhou, Xia Hu, Anshumali Shrivastava.  
*ICML'24*
- 2023 **Federated Learning Over Images: Vertical Decompositions and Pre-Trained Backbones Are Difficult to Beat.**  
Yuxin Tang\*, Ed Hu\*, Anastasios Kyrillidis, Chris Jermaine.  
*ICCV'23*
- 2023 **Auto-Differentiation of Relational Computations for Very Large Scale Machine Learning.**  
Yuxin Tang, Zhimin Ding, Dimitrije Jankov, Binhang Yuan, Daniel Bourgeois, Chris Jermaine.  
*ICML'23*
- 2022 **Distributed learning of fully connected neural networks using independent subnet training.**  
Binhang Yuan, Cameron R. Wolfe, Chen Dun, Yuxin Tang, Anastasios Kyrillidis, Chris Jermaine.  
*VLDB'22*
- 2021 **Tensor Relational Algebra for Machine Learning System Design.**  
Binhang Yuan, Dimitrije Jankov, Jia Zou, Yuxin Tang, Daniel Bourgeois, and Chris Jermaine.  
*VLDB'21*
- 2020 **Programmable In-Network Security for Context-aware BYOD Policies.**  
Qiao Kang, Lei Xue, Adam Morrison, Yuxin Tang, Ang Chen, Xiapu Luo.  
*USENIX Security'20*

- 2018      **A Programmable, Hardware-Assisted Network Protocol Fuzzer.**  
Yuxin Tang, Ang Chen.  
*OSDI'18 (Poster)*
- 2017      **Exploring Simulation of Software-Defined Underwater Wireless Networks.**  
Li Wei, Yuxin Tang, Yuching Cao, Zhaohui Wang, Mario Gerla.  
*MobiCom'17 Workshop on Underwater Networks*

## SERVICE

### Conference Reviewer:

*ICLR 2021–2025, ICML 2020–2025, NeurIPS 2021–2025*

### Session Chair:

*VLDB 2023, MLSys 2025*

### Program Committee:

*CGO 2023, UDM-AAAI 2023, PLDI 2023*

### Data to Knowledge (D2K) Fellow:

*Fall 2022, Fall 2023, Spring 2024*

## REFERENCES

**Professor** Chris Jermaine, Department of Computer Science, Rice University

**Professor** Xia "Ben" Hu, Department of Computer Science, Rice University

**Professor** Arlei Silva, Department of Computer Science, Rice University

**Professor** Beidi Chen, Department of Electrical and Computer Engineering, Carnegie Mellon University (CMU)

**Professor** Binhang Yuan, Department of Computer Science & Engineering, Hong Kong University of Science and Technology (HKUST)