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

Large-scale Machine Learning, Data Management

INTERNSHIP

2024 Summer **Bosch Center for Artificial Intelligence (BCAI), Sunnyvale, CA**

- 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.

2023 Summer **Visa Research, Palo Alto, CA**

- 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.

2021 Summer **Jane Street, New York City, NY**

- Design transformer based model to optimize open-to-open portfolio trading returns, resulting in high returns and an elevated Sharpe ratio.
- Integrated constraints into the loss function to adapt the model for varying market conditions.

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.
submitted to SIGMOD'26

2025 **TURNIP: A "Nondeterministic" GPU Runtime with CPU RAM Offload.**
Zhimin Ding, Jiawen Yao, Brianna Barrow, Tania Lorido Botran, Christopher Jermaine, Yuxin Tang, Jiehui Li, Xinyu Yao, Sleem Mahmoud Abdelghafar, Daniel Bourgeois.
submitted to ICML'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.
submitted to 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 **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 2020–2025, AISTATS 2022–2023

Session Chair:
VLDB 2023, MLSys 2025

REFERENCES

Professor Chris Jermaine, Department of Computer Science, Rice University
Professor Xia "Ben" Hu, Department of Computer Science, Rice University
Professor Anastasios Kyrillidis, Department of Computer Science, Rice University
Professor Arlei Silva, Department of Computer Science, Rice University