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.A.	Statistics, University of California, Los Angeles, 2016-2018
B.S.	Computer Science, Shanghai Jiao Tong University, 2014-2018

RESEARCH AREAS

Distributed Machine Learning, Large Language Model, Reinforcement Learning

WORK EXPERIENCE

Amazon AGI, *Applied Scientist*, New York, NY *2025.01–Present*

• Work on large-scale compute-optimal MoE model scaling and design hardware-aware performance modeling.

• Lead data preprocessing and pretraining (annealing) efforts for 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.
VLDB'26

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)