# Yuxin Tang

Department of Computer Science

Rice University

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## SKILLS

**Programming**

- Python, C++, CUDA.
- Expertise with deep learning system performance optimization

**Framework**

- PyTorch, PostgreSQL, Spark, Flutter, MongoDB, Android/iOS
- Familiar with machine learning system design and database system design

## EDUCATION

Ph.D.          Computer Science, Rice University, 2018-Present
               Advisor: Chris Jermaine

B.S.           Computer Science, Shanghai Jiao Tong University, 2014-2018

## RESEARCH AREAS

Large-scale machine learning, data management for machine learning
Distributed machine learning, on-device machine learning, federated learning

## INTERNSHIP

2022           ByteDance Inc, Mountain View, CA
               Graph Learning Team - Applied Research Center

               - Worked on self-supervised learning (SSL) on graphs and implemented the
               multi-view graph contrastive learning model (MVGRL) on large graph datasets.
               - Worked on the scalability issues of graph diffusion by approximating personalized
               PageRank. End-to-end training time is reduced 60%.
               - Worked on the sparse tensor representation for graph preprocessing, graph training
               and inference. Peak memory usage is reduced to only 29%.

2018           Pygmal Technologies, Shanghai

               - Formalized one cryptocurrency trading platform front-end design
               - Developed one cryptocurrency trading platform mobile application using Flutter 2.0

2017-2018      Intel Asia-Pacific Research & Development Ltd, Shanghai
               Javascript Technology Center

               - Improved average page load speed by around 5% for JavaScript engine in Chrome V8
               - Submitted 10 more patches for Chromium Speedometer 2.0 benchmark
               - Identified possible performance optimization for web-assembly (wasm) opencv.js
               benchmark by JIT compilation

## PUBLICATION

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       **Federated Multiple Label Hashing (FedMLH): Communication Efficient Federated Learning on Extreme Classification Tasks.**
Yuxin Tang, Zhenwei Dai, Chen Dun, Anastasios Kyrillidis, Anshumali Shrivastava.
*ICML-FL'21*

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*

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*

## AWARDS

2022       ICML travel grant

2020       Ken Kennedy Institute Computational Science and Engineering Fellowship ($15,000/4 years)

2017       Hongyi Scholarship (¥25,000)

2016       Gold Medal, International Genetically Engineered Machine Competition

2015       Chun-Tsung Scholar (funded by Nobel Prize Winner T. D. Lee) (¥15,000)

2014       Scholarship of Academic Excellence of SJTU

## SERVICE

Conference Reviewer:
*ICML 2021, ICML 2022, NeurIPS 2022, AISTATS 2023*