

DIXI YAO

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EDUCATION

University of Toronto

M.A.Sc, Department of Electrical and Computer Engineering

Toronto, Canada

Sept. 2022 –

- Advisor: Prof. Baochun Li.

Shanghai Jiao Tong University

BEng, Department of Computer Science

Shanghai, China

Aug. 2018 – Jun. 2022

- AI Honors Program. Bachelor Thesis: **Research on privacy preserving methods via Transnformer**
- Advisor: Prof. Liyao Xiang, Prof. Xinbing Wang. Theme: Intelligent Edge

Max Planck Institute for Informatics

Research Intern Fellowship

Saarbrücken, Germany

Jul. 2021 – Dec. 2021

- Advisor: Prof. Yiting Xia. Theme: **Distributed Deep Learning Benchmark**

RESEARCH INTERESTS

My research interests lie primarily in **developing more efficient, scalable and privacy-preserving deep learning architecture across multiple devices.**

- Machine learning (adaptive ML algorithm), AutoML (Neural Architecture Search)
- Distributed deep learning, federated learning, and context-aware architecture
- Network-accelerated architecture, cloud computing, and network optimization
- Multi-disciplinary topics in machine learning, network optimization, and distributed systems

PUBLICATIONS

Privacy-Preserving Split Learning via Patch Shuffling over Transformers

Proc. IEEE International Conference on Data Mining (ICDM), Orlando, USA

Nov 28 - Dec 1, 2022

- **Dixi Yao**, Liyao Xiang, Hengyuan Xu, Hangyu Ye, Yingqi Chen

Context-Aware Compilation of DNN Training Pipelines across Edge and Cloud

Proc. ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)

Vol. 5, No. 4, 2021

- **Dixi Yao**, Liyao Xiang, Zifan Wang, Jiayu Xu, Chao Li, Xinbing Wang

Federated Model Search via Reinforcement Learning

Proc. IEEE International Conference on Distributed Computing Systems (ICDCS), USA

July 7-10, 2021

- **Dixi Yao***, Lingdong Wang*, Jiayu Xu, Liyao Xiang, Shuo Shao, Yingqi Chen, Yanjun Tong

Context-Aware Deep Model Compression for Edge Cloud Computing

Proc. IEEE International Conference on Distributed Computing Systems (ICDCS), Singapore

July 8 - 10, 2020

- Lingdong Wang, Liyao Xiang, Jiayu Xu, Jiaju Chen, Xing Zhao, **Dixi Yao**, Xinbing Wang, Baochun Li

UNDER REVIEW PAPERS

- First authored paper submitted to ICML2023.
- Fourth authored paper submitted to ICML2023.

ACADEMIC PRESENTATION AND LECTURES

- Oral presentation *Privacy-Preserving Split Learning via Patch Shuffling over Transformers* in ICDM2022.
- Oral presentation *Context-Aware Compilation of DNN Training Pipelines across Edge and Cloud* in UbiComp2022.
- Oral presentation *Federated Model Search via Reinforcement Learning* in ICDCS2021.
- Opened two open lectures for **SJTU CS149 Data Structure** (over **100** students participated).
- Opened winter online lecture *How to study well during COVID19?* (over **1000** students participated).

PAPER REVIEWS

- 2023 ACM Multimedia Systems Conference.
- 2022 IEEE the 8th International Conference on Computer and Communications (ICCC).

TEACHING EXPERIENCES

- Teaching Assistant: UofT ECE243 Computer Organization, SJTU MA500 Application of fuzzy Math.
- Course Lab Designer: SJTU EE447 Mobile Internet.
- Online material coordinator: SJTU CS214 Algorithm and Complexity

SELECTED SCHOLARSHIPS AND AWARDS

- **Edward S. Rogers Sr. Graduate Scholarships. 2022, 2023**
- **Shanghai Jiao Tong University outstanding graduates. 2022**
- **National outstanding college student project of innovation. 2022**
- **Alumni Foundation Scholarship:** Awarded to only **0.5%** of students in the School of Electronic Information and Electrical Engineering. 2021
- **Huawei Scholarship:** Awarded to the top **1%** in the School of Electronic Information and Electrical Engineering. 2020
- **East Dong Business Scholarship:** Awarded to only **1** student in the Department of Computer Science. 2019
- **Honor for outstanding students:** Awarded to only **2%** of students in the School of Electronic Information and Electrical Engineering. 2019, 2020, 2021, 2022
- **First prize** in China Collegiate Mathematics contest. 2019
- **First prize** in National Olympiad in Informatics. 2017 (during high school.)

OPEN SOURCE COMMUNITY PARTICIPATED

- [Plato](#) | iQua Research group.
- Shanghai Jiao Tong University open source hardware community.

SELECTED OPEN SOURCE PROJECTS (MORE ON GITHUB)

- Optimization over Client Selection in Efficient Federated Learning | Python | [code](#)
- Navigating Tooth Extraction UR5 | Python, C++ | [code](#)
- Simulated Five level pipeline CPU | Verilog | [code](#)
- Cloud Solidwork Application | Python, PHP | [code](#)
- Communication Between Machine and Human | Python | [code](#)
- Projection and Transformation: How to Construct a Good Model | Python | [code](#)
- Extend Structure Entropy of Graph | Python | [code](#)
- MentorRelate | Python, Web | [code](#)

SELECTED TECHNIQUE REPORTS AND ARTICLES

- Towards Hybrid Fuzzing with Multi-level Coverage Tree and Reinforcement Learning in Greybox Fuzzing | [paper](#)
- ASD Saliency Map Prediction and Discrimination Based on SalGAN | [paper](#)
- Computer Ethics and Cyberpunk | [paper](#)

SOCIAL ACTIVITIES

- Member of SJTU SEIEE reserve of talents for academic guidance, 2020, 2021, 2022.
- Member of Study Assistance Committee in the School of Electronic Information and Electrical Engineering in Shanghai Jiao Tong University. 2018, 2019, 2020, 2021, 2022.
- Department Leader of Propaganda in students' committee under SJTU Office of Undergraduate Education. 2020, 2021
- IBM Hackathon in 2019.
- Final 16 teams in Shanghai Jiao Tong University RoboMaster Robotics Competition, team leader.
- Shanghai Jiao Tong University Capture-the-flag competition.
- Shanghai Jiao Tong University Blockchain knowledge competition.
- International volunteer in Sri Lanka.
- Volunteer for Shanghai 2022, Shanghai Marathon.