Jing Xu

PhD Student, Institute for Interdisciplinary Information Sciences, Tsinghua University
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EDUCATION

TSINGHUA UNIVERSITY   Sep. 2021 – Present

Ph.D in Computer Science

- **Advisor:** Andrew Chi-Chih Yao

PEKING UNIVERSITY   Sep. 2017 - Jul. 2021

B.S. in Computer Science (Turing Honor Program)

- **Overall GPA:** 3.87/4.00
- **Ranking：** 1/93
- **Courses:**
  Probability and Statistics (4.00), Linear Algebra (4.00), Combinatorial Mathematics (3.95 &4.00)
  Data Structure and Algorithm (3.88), Algorithm Design and Analysis(3.88), Convex Optimization(3.88)
- **Honors and Awards:**
  May 4th Scholarship at PKU (Sept 2018)
  Award for Academic Excellents at PKU (Sept 2018)
  Turing Class Scholarship (Sept 2019)
  John Hopcroft Scholarship (Sept 2020)
  Huawei Scholarship (Sept 2020)
  Excellent Graduate of PKU (June 2021)

RESEARCH INTEREST

My research focuses on machine learning, both on theoretical side and application side. my current focus involves establishing theoretical guarantees of generalization and optimization of deep learning algorithms. I have previously worked on topics including adversarial robustness, federated learning and differential privacy.

PUBLICATIONS AND PREPRINTS

1. Jing Xu*, Jiaye Teng*, Yang Yuan, Andrew C Yao
   Towards Data-Algorithm Dependent Generalization Analysis: a Case Study on Overparameterized Linear Regression
   Neurips 2023
2. Jing Xu*, Haoxiong Liu*
   Quantifying the Variability Collapse of Neural Networks
   ICML 2023
3. Lesi Chen, Jing Xu, Luo Luo
   Faster Gradient-Free Algorithms for Nonsmooth Nonconvex Stochastic Optimization
   ICML 2023
4. Lesi Chen*, Jing Xu*, JingZhao Zhang
   On Bilevel Optimization without Lower-level Strong Convexity
   in submission, arXiv 2301.00712
5. Jing Xu, Sen Wang, Liwei Wang, Andrew C Yao

FedCM: Federated Learning with Client-level Momentum
in submission, arXiv 2106.10874

SKILLS

- **Programming:** Python, C/C++, Matlab, Pytorch, Tensorflow, LaTeX
- **English Proficiency:** TOEFL iBT: 107(Reading: 30, Listening: 29, Speaking: 24, Writing: 24), GRE：332

TEACHING ASSISTANT EXPERIENCE

1. Mathematics for Computer Science
   Taught by Professor Andrew Chi-Chih Yao, Tsinghua University, 2022~2023 Spring
2. Introduction to Optimization
   Taught by Professor Jingzhao Zhang, Tsinghua University, 2022~2023 Autumn
3. Introduction to Computer Systems
   Taught by Professor Chenren Xu, Peking University, 2019~2020 Autumn

SERVICES

- Served as a reviewer of ICML2022, Neurips2023, ICLR2024.