

WENXUAN BAO

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EDUCATION

University of Illinois Urbana-Champaign

Jan 2021 - Present

Doctor of Philosophy in Computer Science

- Supervisor: Prof. Jingrui He
- Research Topic: Trustworthy Federated Learning

Tsinghua University

Aug 2016 - Jun 2020

Bachelor of Engineering in Automation, Minor in Statistics

- GPA: 3.91/4.00, Graduating Summa Cum Laude (top 2%), National Scholarship (top 2%).

RESEARCH INTERESTS

- My research interests focus on federated learning, transfer learning, adversarial robustness and fairness.

RESEARCH EXPERIENCE

University of Illinois Urbana-Champaign

Jan 2021 - Present

Research Assistant (supervised by Prof. Jingrui He)

- Focused on the effectiveness, efficiency, robustness, and fairness of federated learning systems.
- Proposed a novel robust parameter aggregation scheme to improve the robustness of Federated Learning systems to malicious clients, increasing the worst-case accuracy by 7.0% in average of 3 benchmarking datasets and models.
- Proposed a novel clustered federated learning framework to tackle the negative transfer problem, increasing the incentivized rate by 40% in average under label shift, feature shift and concept shift.

University of Rochester

Jul 2019 - Dec 2019

Research Internship (supervised by Prof. Chenliang Xu)

- Proposed a Deep Grouping Model for unified perceptual parsing, improving the accuracy and mIoU of Deep CNN models on five tasks (object segmentation, part segmentation, scene recognition, material perception, and texture perception).

TEACHING EXPERIENCE

University of Illinois Urbana-Champaign

Jan 2023 - Present

Teaching Assistant of CS 412: Introduction to Data Mining. Instructor: Prof. Hanghang Tong

PUBLICATIONS & PREPRINTS

- Wenxuan Bao, Haohan Wang, Jun Wu Jingrui He. *Optimizing the Collaboration Structure in Cross-silo Federated Learning*. ICML 2023.
- Wenxuan Bao, Jingrui He. *BOBA: Byzantine-Robust Federated Learning with Label Skewness*. ArXiv 2022.
- Zhiheng Li, Wenxuan Bao, Jiayang Zheng, Chenliang Xu. *Deep Grouping Model for Unified Perceptual Parsing*. CVPR 2020.

PREVIOUS TALKS

- Jun Wu, Wenxuan Bao, Jingrui He. *Learning from Non-IID Data: Centralized vs. Federated Learning*. BigData 2022.

SERVICE

- I have served as a program committee member or a reviewer in major top conferences (e.g., CIKM, KDD, ICLR).