Tianxin Wei

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CURRENT STATUS

I'm a third-year Ph.D. student at the University of Illinois at Urbana Champaign. My research primarily centers on enhancing the trustworthiness of machine learning algorithms, with a special focus on issues such as bias, fairness, robustness, and transferability. I am particularly interested in applying these principles to critical applications, most notably in the field of information retrieval.

EDUCATION

University of Illinois, Urbana Champaign (UIUC) Champaign, USA

Doctorate in Information Science, iDEA-iSAIL Lab Sep. 2021 – May 2026 (Expected)

- Advisor: Prof. Jingrui He

University of Science and Technology of China (USTC) Anhui, China

Bachelor's Degree in Computer Science, School of the Gifted Young Sep. 2016 – Jul. 2021

- Honors: Artificial Intelligence Talent Class

PUBLICATIONS (* DENOTES EQUAL CONTRIBUTION)

Conference

- **TAU: Trajectory Data Augmentation with Uncertainty for Next POI Recommendation**

  Zhuang Zhuang, **Tianxin Wei**, Lingbo Liu, Heng Qi, Yanming Shen, Baocai Yin

  Accepted by the **AAAI 2024** (**Full Research**)

- **Adaptive Test-Time Personalization for Federated Learning**

  Wenxuan Bao*, **Tianxin Wei***, Haohan Wang, Jingrui He

  Accepted by the **NeurIPS 2023** (**Full Research**)

- **Meta-Learning with Neural Bandit Scheduling**

  Yunzhe Qi, Yikun Ban, **Tianxin Wei**, Jiaru Zou, Huaxiu Yao, Jinrui He

  Accepted by the **NeurIPS 2023** (**Full Research**)

- **NTK-approximating MLP Fusion for Efficient Language Model Fine-tuning [PDF]**

  Tianxin Wei*, Zeming Guo*, Yifan Chen*, Jingrui He

  Accepted by the **ICML 2023** (**Full Research**)

- **Robust Basket Recommendation via Noise-tolerated Graph Contrastive Learning [PDF]**

  Xinrui He*, **Tianxin Wei***, Jingrui He

  Accepted by the CIKM 2023 (Full Research)

- **Augmentations in Hypergraph Contrastive Learning: Fabricated and Generative [PDF]**

Tianxin Wei*, Yuning You*, Tianlong Chen, Yang Shen, Jingrui He, Zhangyang Wang

Accepted by the **NeurIPS 2022** (**Full Research**)

- **Comprehensive Fair Meta-learned Recommender System [PDF]**

  Tianxin Wei, Jingrui He

  Accepted by the **KDD 2022** (**Full Research**)

- **Model-Agnostic Counterfactual Reasoning for Eliminating Popularity Bias in Recommender System [PDF]**

  Tianxin Wei, Fuli Feng, Jiawei Chen, Ziwei Wu, Jinfeng Yi, Xiangnan He

  Accepted by the **KDD 2021** (**Full Research**)

- **Causal Intervention for Leveraging Popularity Bias in Recommendation [PDF]**

  Yang Zhang, Fuli Feng, Xiangnan He, **Tianxin Wei**, Chonggang Song, Guohui Ling and Yongdong Zhang

  Accepted by the **SIGIR 2021**. (**Full Research, Best Paper Honorable Mention**)

- **Fast Adaptation for Cold-start Collaborative Filtering with Meta-learning [PDF]**

  Tianxin Wei, Ziwei Wu, Ruirui Li, Ziniu Hu, Fuli Feng, Xiangnan He, Yizhou Sun, and Wei Wang.

  Accepted by **ICDM 2020** (**Full Research**)

- **Unpaired Multimodal Neural Machine Translation via Reinforcement Learning [PDF]**

  Yijun Wang*, **Tianxin Wei***, Qi Liu, Enhong Chen

  Accepted by **DASFAA 2021** (**Full Research**)

- **AR-Stock: Deep Augmented Relational Stock Prediction [PDF]**

  Tianxin Wei, Yuning You, Tianlong Chen

  Present in the **AAAI 2021** Workshop on Knowledge Discovery from Unstructured Data (Oral).

Journal

- **Graph Contrastive Learning: An Odyssey towards Generalizable, Scalable and Principled Representation Learning on Graphs [PDF]**

  Yan Han, Yuning You, Wenqing Zheng, Scott Hoang, **Tianxin Wei**, Majdi Hassan, Tianlong Chen, Ying Ding, Yang Shen, Zhangyang Wang

  Accepted by the **IEEE Data Engineering Bulletin (Survey)**

Preprint

- **UniMP: Universal Multimodal Personalization with Large Language Model [PDF]**

  Tianxin Wei, etc.

  In submission at a key ML conference

- **Language Models As Semantic Indexers**

  In submission at a key ML conference

- **Scalable and Effective Generative Information Retrieval**

In submission at a key IR conference

- **Neural Collaborative Filtering Bandits via Meta Learning [PDF]**

  Yikun Ban, Yunzhe Qi, **Tianxin Wei**, Jingrui He

  In submission at a key ML conference

- **Connecting Cross-Domain Representations: A Ladder for Domain Generalization**

  In submission at a key ML conference

- **Information Retrieval in Finance**

  Fuli Feng*, **Tianxin Wei***, Xiangnan He, Cheng Luo, Tat-seng Chua

  In submission at a key IR Journal

INTERN EXPERIENCE AT COMPANY & ACADEMIA

- Search Org., **Amazon Inc.** Palo Alto, US

  Research Intern with Xianfeng Tang and Prof. Suhang Wang May. 2023 – Dec. 2023

  Project: Multimodal information retrieval; large language model; parameter-efficient transfer learning

- Department of Computer Science, University of California, Los Angeles (UCLA) California, USA

  Visiting Scholar in Professor **Wei Wang** & **Yizhou Sun**'s Group Jul. 2019 – Sep. 2019

  Project: Graph-based recsys; Automated meta-path discovery

- Department of Electrical & Computer Engineering, University of Texas at Austin (Virtual) Texas, USA

  Research Intern in Professor **Zhangyang Wang**'s Group Jan. 2020 – Aug. 2020

  Project: Self-supervised graph learning; fintech

- Department of Data Science, University of Science and Technology of China Hefei, China

  Research Intern in Professor **Xiangnan He**'s Group Aug. 2019 – Jan. 2021

  Project: Robustness and bias of recsys

COMMUNITY SERVICES

- PC Member/Reviewer: CIKM 2021-2023, ICML 2022-2023, NeurIPS 2022-2023, AAAI 2023-2024, ICLR 2023-2024, KDD 2023, ACL 2023, EMNLP 2023, LoG 2022, WSDM 2023
- Journal Reviewer: TOIS, Machine Learning, TKDE, DMKD, Information Fusion, TMLR, TKDD
- Subreviewer: WWW 2020, SIGIR 2021, SIGIR 2022, KDD 2022

AWARDS

- Best Paper Honorable Mention at SIGIR 2021
- University Nomination (Top 3) for Apple Scholars in AI/ML, 2023
- NeurIPS 2023 Scholar Award
- NeurIPS 2022 Scholar Award
- ICML 2023 Grant Award

- USTC Freshman Undergraduate Scholarship
- USTC Outstanding Undergraduate Scholarship 2017-2020
- Method, apparatus, computer device, and storage medium for processing RecSys | Public Number: CN115700552A
  - Xiangnan He, Yang Zhang, Fuli Feng, **Tianxin Wei**, Chonggang Song, Guohui Ling, Yongdong Zhang
- A meta-learning recommendation method for cold-start users | Public Number: CN110245364A
  - Xiangnan He, **Tianxin Wei,** Ziwei Wu, Fuli Feng
- Mitigating popularity bias in recommendation system via causal inference | Public Number: CN113158024A
  - Xiangnan He, **Tianxin Wei**, Fuli Feng, Jiawei Chen, Jinfeng Yi