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 and efficiency of machine learning algorithms across various modalities and disciplines, with the ultimate goal of making ML models more accessible and inclusive. I am particularly interested in applying these principles to critical applications, most notably in the field of generative modeling, recommender system and 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, working with Prof. Hanghang Tong

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

Bachelor's Degree in Computer Science, School of the Gifted Young (Honor School)   Sep. 2016 – Jul. 2020

➢ Honors: Artificial Intelligence Talent Class

PUBLICATIONS (* DENOTES EQUAL CONTRIBUTION, ^ DENOTES MENTORSHIP)

Conference

➢ **Towards Universal Multi-Modal Personalization: A Language Model Empowered Generative Paradigm [PDF]**

  Tianxin Wei, Bowen Jin, Ruirui Li, Hansi Zeng, Zhengyang Wang, Jianhui Sun, Qingyu Yin, Hanqing Lu, Suhang Wang, Jingrui He, Xianfeng Tang

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

➢ **Scalable and Effective Generative Information Retrieval [PDF]**

  Hansi Zeng, Chen Luo, Bowen Jin, Sheikh Muhammad Sarwar, **Tianxin Wei**, Hamed Zamani

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

➢ **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 [PDF]**

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

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

➢ **Meta-Learning with Neural Bandit Scheduling [PDF]**

  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, 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, 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

➤ **ResMoE: Parameter Compression for Pre-Trained Mixture-of-Experts Transformer via Residual Restoration**

Mengting Ai*, **Tianxin Wei*^**, Yifan Chen, Zhichen Zeng, Ritchie Zhao, Girish Varatkar, Bita Darvish Rouhani, Hanghang Tong, Jingrui He

In submission at a key conference

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

Tianxin Wei, Yifan Chen, Xinrui He, Wenxuan Bao, Jingrui He

In submission at a key conference

➤ **Language Models as Semantic Indexers [PDF]**

Bowen Jin, Hansi Zeng, Guoyin Wang, Xiusi Chen, **Tianxin Wei**, Ruirui Li, Zhengyang Wang, Zheng Li, Yang Li, Hanqing Lu, Suhang Wang, Jiawei Han, Xianfeng Tang

In submission at a key conference

➤ **MLP-POI: Effective MLP-based Reliable Distillation for POI Recommendation**

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

In submission at a key conference

➤ **Client-Centric Federated Adaptive Optimization**

Jianhui Sun, Xidong Wu, **Tianxin Wei**, Yufei Huang, Heng Huang, Aidong Zhang

In submission at a key conference

➤ **Graph Mixup on Approximate Gromov–Wasserstein Geodesics**

Zhichen Zeng, Ruizhong Qiu, Zhe Xu, Zhining Liu, Yuchen Yan, **Tianxin Wei**, Lei Ying, Jingrui He, Hanghang Tong

In submission at a key conference

➤ **Information Retrieval in Finance**

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

In submission at a key Journal

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

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

In submission at a key conference

INTERN EXPERIENCE

➤ Search org, **Amazon Inc.**   Palo Alto, US

Research Intern with Xianfeng Tang and Zhengyang Wang   May. 2023 - Aug. 2023

Project: Generative multimodal personalization; large language model. Published at ICLR'24 and WWW'24.

- ➢ Search org, **Amazon Inc.** Urbana, US

  Part-time Research Intern with Xianfeng Tang and Zhengyang Wang Aug. 2023 - Dec. 2023

  Project: Multi-modal prompt learning for foundation models.

- ➢ 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. Published at ICDM'20.

- ➢ 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. Published at NeurIPS'22.

- ➢ 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. Published at KDD'21 and SIGIR'21.

COMMUNITY SERVICES

- ➢ PC Member/Reviewer: CIKM 2021-2023, ICML 2022-2024, NeurIPS 2022-2023, AAAI 2023-2024, ICLR 2023-2024, KDD 2023-2024, 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

- ➢ University Nomination (Top 3) for 2024 Apple Scholars in AI/ML, 2023
- ➢ Best Paper Honorable Mention at SIGIR 2021
- ➢ NeurIPS 2023 Scholar Award
- ➢ NeurIPS 2022 Scholar Award
- ➢ ICML 2023 Grant Award
- ➢ UIUC Conference Presentation Award, 2023
- ➢ USTC Freshman Undergraduate Scholarship
- ➢ USTC Outstanding Undergraduate Scholarship 2017-2020