TIANFU WANG

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EDUCATION

Research interests include Data Mining, Decision Intelligence, and Large Language Model.

Hong Kong University of Science and Technology, Guangzhou (HKUST-GZ) Starting Fall 2025
Ph.D. in Artificial Intelligence (AI). Supervised by Prof. Hui Xiong (Associate Vice-President of HKUST-GZ).

University of Science and Technology of China (USTC) 2022 – NOW
M.S. in Computer Science (CS). Supervised by Prof. Hui Xiong (also the Fellow of AAAI, AAAS and IEEE).

Chongqing University (CQU) 2018 – 2022
B.S. in Software Engineering (SE). Rank: 6/254 (Top 3%). GPA: 3.78/4.00. Member of Elite Student Alliance.

EXPERIENCE

Microsoft Inc. - Research Intern (Mentor: Dr. Nicholas Jing Yuan, IEEE Fellow) 2024.05 – NOW
Focus on large language models (LLM) for educational tutoring [2] and emotional support.

HKUST-GZ - Research Assistant (Mentor: Prof. Chao Wang) 2024.03 – 2024.05
Investigated complex constraint management within combinatorial optimization problems [1].

MSRA - Research Intern (Mentor: Dr. Jianxun Lian) 2023.08 – 2023.12
Researched Web3 mining [4] and the application of LLM-based agents in educational scenarios.

Microsoft Inc. - Research Intern (Mentor: Dr. Nicholas Jing Yuan) 2022.06 – 2023.12
Developed data-driven valuation [4] and profit-aware generation [12] of non-fungible token (NFT).

JD.COM Inc. - Research Intern (Mentor: Prof. Li Shen) 2021.08 – 2022.04
Focused on machine learning for combinatorial optimization (CO) in cloud computing [6].

AWARDS

National Scholarship (2024, 2021); *National Encouragement Scholarship (2019)*; *Zhu-Jingwen Scholarship (2020)*; *USTC Academic Scholarship×3*; *CQU Excellent Student Scholarship×4*

***Outstanding Graduate, Anhui Province* (2025)**; ***Outstanding Undergraduate Thesis, Chongqing City* (2022)**; *Smart Dock Future Star, Huawei Inc.*(2021); *Excellent Student, Student Cadres, Volunteer, CQU* (2022-19);

National First Prize, China Collegiate Computing Contest - Network Technology Challenge (2021); *M Prize, International Mathematical Contest in Modeling (2021)*; *Other National Third Prizes × 3*;

SKILLS

- **Algorithm**: LLM; Reinforcement Learning; Graph Learning; Combinatorial Optimization
- **Development**: Backend (Django, SpringBoot); Frontend (Vue, React); SQL; Smart Contract
- **Others**: Slide Making; Video Editing; Figma Design; Photography; Marathon Running;

OTHERS

- **Exchange & Visits**: Participated in the AI exchange program of *University of Cambridge*, UK (2021), and the Intelligent Computing visiting program of *University of Tokyo* and *Waseda University*, Japan (2020).
- **Open-source Contributions**: Independently developed the algorithm library on networking resource allocation, *Virne* (Star 100+), and maintains the paper collection project in this field (Star 100+).
- **Community Involvement**: A prospective member of *Datawhale*, a well-known open-source organization, and a core contributor to the *Statistical Learning Method Problem Solving* project (Star 1.8K+).

PUBLICATIONS [GOOGLE SCHOLAR , DBLP]

[1] **Tianfu Wang**, Long Yang, Chao Wang, Chuan Qin, Liwei Deng, Wei Wu, Li Shen, and Hui Xiong. Conal: Towards constraint-aware learning for resource allocation in network virtualization. In *International Conference on Machine Learning (**ICML**)*, 2025. (CCF-A, CORE A*, Under Review).

[2] **Tianfu Wang**, Yi Zhan, Jianxun Lian, Zhengyu Hu, Nicholas Jing Yuan, Qi Zhang, Xing Xie, and Hui Xiong. Llm-powered multi-agent framework for goal-oriented learning in intelligent tutoring system. In *ACM Web Conference (**WWW**)*, 2025. (CCF-A, CORE A*, Oral Presentation).

[3] Liwei Deng*, **Tianfu Wang***, Yan Zhao, and Kai Zheng. Million: A general multi-objective framework with controllable risk for portfolio management. In *International Conference on Very Large Data Bases (**VLDB**)*, 2025. (CCF-A, CORE A*, Equal Contribution).

[4] **Tianfu Wang**, Liwei Deng, Chao Wang, Jianxun Lian, Yue Yan, Nicholas Jing Yuan, Qi Zhang, and Hui Xiong. Comet: Nft price prediction with wallet profiling. In *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**)*, 2024. (CCF-A, CORE A*).

[5] **Tianfu Wang**, Qilin Fan, Chao Wang, Leilei Ding, Nicholas Jing Yuan, and Hui Xiong. Flagvne: A flexible and generalizable reinforcement learning framework for network resource allocation. In *International Joint Conference on Artificial Intelligence (**IJCAI**)*, 2024. (CCF-A, CORE A*).

[6] **Tianfu Wang**, Shen Li, Qilin Fan, Tong Xu, Tongliang Liu, and Hui Xiong. Joint admission control and resource allocation of virtual network embedding via hierarchical deep reinforcement learning. *IEEE Transactions on Services Computing (**TSC**)*, 2023. (CCF-A, CORE A*, JCR-Q1).

[7] **Tianfu Wang**, Liwei Deng, Xi Chen, Junyang Wang, Huiguo He, Leilei Ding, Wei Wu, Qilin Fan, and Hui Xiong. Virne: A comprehensive benchmark of rl-based network resource allocation in nfv. In *Annual Conference on Neural Information Processing Systems (**KDD**)*, 2025. (CCF-A, CORE A*, Working).

[8] **Tianfu Wang**, Qilin Fan, Xiuhua Li, Xu Zhang, Qingyu Xiong, Shu Fu, and Min Gao. Drl-sfcp: Adaptive service function chains placement with deep reinforcement learning. In *IEEE International Conference on Communications (**ICC**)*, 2021. (CCF-C, CORE B).

[9] Liwei Deng, Penghao Chen, Ximu Zeng, **Tianfu Wang**, Hao Miao, Yan Zhao, and Kai Zheng. Efficient data-aware distance comparison operations for high-dimensional approximate nearest neighbor search. In *International Conference on Very Large Data Bases (**VLDB**)*, 2025. (CCF-A, CORE A*).

[10] Liwei Deng, Fei Wang, **Tianfu Wang**, Yan Zhao, Yuyang Xia, and Kai Zheng. Exact and efficient similar subtrajectory search: Integrating constraints and simplification. In *IEEE International Conference on Data Engineering (**ICDE**)*, 2025. (CCF-A, CORE A*).

[11] Leilei Ding, Dazhong Shen, Chao Wang, **Tianfu Wang**, Le Zhang, and Yanyong Zhang. Dgr: A general graph desmoothing framework for recommendation via global and local perspectives. In *International Joint Conference on Artificial Intelligence (**IJCAI**)*, 2024. (CCF-A, CORE A*).

[12] Huiguo He, **Tianfu Wang**, Huan Yang, Jianlong Fu, Nicholas Jing Yuan, Jian Yin, Hongyang Chao, and Qi Zhang. Learning profitable nft image diffusions via multiple visual-policy guided reinforcement learning. In *ACM International Conference on Multimedia (**MM**)*, 2023. (CCF-A, CORE A*).

[13] Qilin Fan, Yue Niu, Hao Yin, **Tianfu Wang**, Xiuhua Li, and Jinlong Hao. Gat-il: A service function chain deployment method based on graph attention network and imitation learning. *Acta Electronica Sinica*, 2023. (CCF-A, In Chinese).

[14] Liwei Deng, Penghao Chen, Ximu Zeng, **Tianfu Wang**, Yan Zhao, and Kai Zheng. Accelerating distance comparison operation for maximum inner product search. In *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**)*, 2025. (CCF-A, CORE A*, Under Review).

[15] Junyang Wang, Lan Zhang, Yihang Cheng, Mu Yuan, **Tianfu Wang**, Zhihui Fu, and Jun Wang. Fedtop: Efficient topology learners for heterogeneous federated graph learning. In *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**)*, 2025. (CCF-A, CORE A*, Under Review).

[16] Wei Wu, Zhuoshi Pan, Chao Wang, Liyi Chen, Yunchu Bai, **Tianfu Wang**, Kun Fu, Zheng Wang, and Hui Xiong. Tokenselect: Efficient long-context inference and length extrapolation for llms via dynamic token-level kv cache selection. In *Annual Meeting of the Association for Computational Linguistics (**ACL**)*, 2025. (CCF-A, CORE A*, Under Review).

[17] Yuting Huang, Leilei Ding, Zhipeng Tang, **Tianfu Wang**, Dongfang Liu, Wuyang Zhang, Yanyong Zhang, and Mingxiao Ma. Safe-beal: A framework for benchmarking and aligning task-planning safety in llm-based embodied agents. In *Annual Meeting of the Association for Computational Linguistics (**ACL**)*, 2025. (CCF-A, CORE A*, Under Review).

[18] Zhengyu Hu, Linxin Song, Jieyu Zhang, Zheyuan Xiao, **Tianfu Wang**, Zhenyu Chen, Jianxun Lian, Nicholas Jing Yuan, Kaize Ding, and Hui Xiong. Explaining length bias in llm-based preference evaluations. In *Annual Meeting of the Association for Computational Linguistics (**ACL**)*, 2025. (CCF-A, CORE A*, Under Review).

[19] Yi Zhan, Qi Liu, Weibo Gao, Zheng Zhang, **Tianfu Wang**, Zhenya Huang, Junyu Lu, and Shuanghong Shen. Coderagent: Simulating student behavior for personalized programming education with large language models. In *International Joint Conference on Artificial Intelligence (**IJCAI**)*, 2025. (CCF-A, CORE A*, Under Review).

[20] Wen Gao, Zhiwen Yu, **Tianfu Wang**, Liang Wang, Helei Cui, Bin Guo, and Hui Xiong. Gnn-based deep reinforcement learning for computation task scheduling in autonomous multi-robot systems. *Journal of Systems Architecture: Embedded Software Design (**JSA**)*, 2025. (CCF-B, CORE B, JCR-Q1, Working).

[21] Fei Wang, Qilin Fan, **Tianfu Wang**, Xu Zhang, Xiuhua Li, and Hao Yin. Ikenga: Infeasibility knowledge-enhanced genetic algorithm for virtual network embedding. *IEEE Transactions on Green Communications and Networking (**TGCN**)*, 2025. (JCR-Q2, Under Review).

Projects

- **Virne**: An NFV simulator for benchmarking networking resource allocation (Star 100+)
- **GenMentor**: An llm-powered intelligent tutoring system for goal-oriented learning
- **SDN-NFV Papers**: A paper collection on resource management in NFV networks (Star 100+)
- **LLM4EDU Papers**: A paper collection on AI and LLM for education (Star 60+)

Services

- **Reviewer**: ICML'25; ICLR'25; NeurIPS'24-25; KDD'25; WWW'24; ACM MM'23-24;