Zhiyong Wang | Curriculum Vitae

The Chinese University of Hong Kong, Shatin, N.T., Hong Kong SAR

 (+852) 9207 8123 • ✉ zhiyongwangwzy@gmail.com

 https://zhiyongwangwzy.github.io/

in https://www.linkedin.com/in/zhiyong-wang-a44aaa1a3/

 https://twitter.com/Zhiyong16403503

 https://scholar.google.com/citations?user=JnT7gacAAAAJhl=zh-CN

EDUCATION

The Chinese University of Hong Kong   **Hong Kong, China**
Ph.D. in Computer Science and Engineering   *Aug.2021–Jul.2025 (expected)*
ANSR Lab, supervised by Prof. John C.S. Lui (ACM/IEEE Fellow)

Cornell University   **Ithaca, New York, USA**
Visiting Ph.D. in Computer Science and Engineering   *Mar.2024–Oct. 2024*
Supervised by Prof. Wen Sun

Huazhong University of Science and Technology   **Wuhan, China**
B.E. in Electronic Information Engineering   *Sep.2017–Jun.2021*
Advanced Class in Mathematics and Physics for Information Science

RESEARCH INTERESTS

The primary goal of my research is to design provably efficient and practical algorithms for data-driven online sequential decision-making under uncertainty. Specifically, I am interested in reinforcement learning (RL), multi-armed bandits, and their applications (e.g., in (conversational) recommendation systems, computer networks, video analytics, etc). Recently, I have also been interested in RL (including bandits) + Generative AI (e.g., diffusion models, LLMs, etc).

Papers in Submission (* denotes equal contribution)

- **Towards Zero-Shot Generalization in Offline Reinforcement Learning,**
  Zhiyong Wang, Chen Yang, John C.S. Lui, Dongruo Zhou,
  Adaptive Learning in Complex Environments TTIC Workshop, 2024.
  ICML 2024 Workshop: Aligning Reinforcement Learning Experimentalists and Theorists.
  TTIC Summer Workshop 2024: Data-Driven Decision Processes: From Theory to Practice.
  In submission to ICML 2025.
- **Online Clustering of Dueling Bandits,**
  Zhiyong Wang, Jiahang Sun, Mingze Kong, Jize Xie, Qinghua Hu, John C.S. Lui, Zhongxiang Dai,
  In submission to ICML 2025.
- **In-Context Federated Learning: A Collaborative Approach for Iterative Answer Refinement,**
  Ruhan Wang*, Zhiyong Wang*, Chengkai Huang*, Rui Wang, Tong Yu, Lina Yao, John C.S. Lui, Dongruo Zhou,
  In submission to ICML 2025.
- **Large Language Model-Enhanced Multi-Armed Bandits,**
  Jiahang Sun*, Zhiyong Wang*, Runhan Yang*, Chenjun Xiao, John C.S. Lui, Zhongxiang Dai,
  Accepted in ICLR 2025 Workshop on Reasoning and Planning for Large Language Models
  In submission to ICML 2025.
- **Meta-Prompt Optimization for LLM-Based Sequential Decision Making,**
  Mingze Kong, Zhiyong Wang, Yao Shu, Zhongxiang Dai,
  Accepted in ICLR 2025 Workshop on Reasoning and Planning for Large Language Models
  In submission to ICML 2025.
- **Federated Linear Dueling Bandits,**

Xuhan Huang, Yan Hu, Zhiyan Li, <u>Zhiyong Wang</u>, Benyou Wang, Zhongxiang Dai,
In submission to ICML 2025.

○ **Cascading Bandits Robust to Adversarial Corruptions,**
Jize Xie, Cheng Chen, <u>Zhiyong Wang</u>, Shuai Li,
In submission to UAI 2025.

PUBLICATIONS (* denotes equal contribution, # denotes corresponding author)

○ **Model-based RL as a Minimalist Approach to Horizon-Free and Second-Order Bounds,**
<u>Zhiyong Wang</u>, Dongruo Zhou, John C.S. Lui, Wen Sun.
Selected as a course reference paper for CS 6789: Foundations of Reinforcement Learning at Cornell University.
Accepted in the Thirteenth International Conference on Learning Representations (ICLR), 2025.

○ **Variance-Dependent Regret Bounds for Non-stationary Linear Bandits,**
<u>Zhiyong Wang</u>, Jize Xie, Yi Chen, John C.S. Lui, Dongruo Zhou,
Adaptive Learning in Complex Environments TTIC Workshop, 2024.
ICML 2024 Workshop: Foundations of Reinforcement Learning and Control – Connections and Perspectives.
Presented at the 25th International Symposium on Mathematical Programming (ISMP), 2024.
Accepted in the 28th International Conference on Artificial Intelligence and Statistics (AISTATS), 2025.

○ **Online Learning and Detecting Corrupted Users for Conversational Recommendation Systems,**
Xiangxiang Dai*, <u>Zhiyong Wang</u>*#, Jize Xie, Tong Yu, John C.S. Lui,
Accepted in the IEEE Transactions on Knowledge and Data Engineering (TKDE), 2024.

○ **Conversational Recommendation with Online Learning and Clustering on Misspecified Users,**
Xiangxiang Dai*, <u>Zhiyong Wang</u>*#, Jize Xie, Xutong Liu, John C.S. Lui,
Accepted in the IEEE Transactions on Knowledge and Data Engineering (TKDE), 2024.

○ **Combinatorial Multivariant Multi-Armed Bandits with Applications to Episodic Reinforcement Learning and Beyond,**
Xutong Liu, Siwei Wang, Jinhang Zuo, Han Zhong, Xuchuang Wang, <u>Zhiyong Wang</u>, Shuai Li, Mohammad Hajiesmaili, John C.S. Lui, Wei Chen,
Accepted in the Forty-first International Conference on Machine Learning (ICML), 2024.

○ **Quantifying the Merits of Network-Assist Online Learning in Optimizing Network Protocols,**
Xiangxiang Dai*, <u>Zhiyong Wang</u>*, Jiancheng Ye, John C.S. Lui,
Accepted in the IEEE/ACM International Symposium on Quality of Service (IWQoS), 2024.

○ **Online Optimal Service Caching for Multi-Access Edge Computing: A Constrained Multi-Armed Bandit Optimization Approach,**
Weibo Chu, Xiaoyan Zhang, Xinming Jia, John C.S. Lui, <u>Zhiyong Wang</u>,
Accepted in the Computer Networks. 2024.

○ **Federated Contextual Cascading Bandits with Asynchronous Communication and Heterogeneous Users,**
Hantao Yang, Xutong Liu, <u>Zhiyong Wang</u>, Hong Xie, John C.S. Lui, Defu Lian, Enhong Chen,
Accepted in the AAAI Conference on Artificial Intelligence (AAAI), 2024.

○ **Learning Context-Aware Probabilistic Maximum Coverage Bandits: A Variance-Adaptive Approach,**
Xutong Liu, Jinhang Zuo, Junkai Wang, <u>Zhiyong Wang</u>, Yuedong Xu, John C.S. Lui,
IEEE International Conference on Computer Communications (INFOCOM), 2024.

○ **Online Clustering of Bandits with Misspecified User Models,**
<u>Zhiyong Wang</u>, Jize Xie, Xutong Liu, Shuai Li, John C.S. Lui,
Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS), 2023.

○ **Online Corrupted User Detection and Regret Minimization,**
<u>Zhiyong Wang</u>, Jize Xie, Xutong Liu, Shuai Li, John C.S. Lui,
Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS), 2023.

○ **Adversarial Attacks on Online Learning to Rank with Click Feedback,**
Jinhang Zuo, Zhiyao Zhang, <u>Zhiyong Wang</u>, Shuai Li, Mohammad Hajiesmaili, Adam Wierman,
Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS), 2023.

- **Efficient Explorative Key-term Selection Strategies for Conversational Contextual Bandits,**
  Zhiyong Wang, Jize Xie, Xutong Liu, Shuai Li, John C.S. Lui,
  Thirty-seventh AAAI Conference on Artificial Intelligence (AAAI), 2023.

WORKING EXPERIENCE

1. Microsoft Research Asia (Jun. 2023- Sep. 2023) -Theory Center, Research Intern,
Mentor: Dr. Wei Chen (ACM/IEEE Fellow, Director of Microsoft Research Asia Theory Center).

HONORS & AWARDS

TTIC Summer Workshop Travel Grant for Adaptive Learning in Complex Environments	2024, **TTIC**
Reaching Out Award	2024, **HKSAR Government**
Full Postgraduate Studentship	2021-2025, **CUHK**
Outstanding Graduates of Huazhong University of Science and Technology	2021, **HUST**
Outstanding Undergraduates in terms of Academic Performance (3%)	2017-2021, **HUST**
Scholarship for excellent academic performance (3%)	2019-2020, **HUST**
S. I. Komarova Scholarship for academic excellence	2020, **Valeon**
National Scholarship twice	2017-2018, 2018-2019, **Ministry of Education of China**
Merit Student twice (3%)	2017-2018, 2018-2019, **HUST**
Scholarship for Exploration	2018, **Whale Education Foundation**
Second Prize in the 11th Mathematical Modeling Competition of Central China	2018, **HBSIAM**
Scholarship for outstanding academic performance for Freshmen	2017-2018, **HUST**

TEACHING EXPERIENCE

Guest Lecture..

CS 6789: Foundations of Reinforcement Learning	**Fall 2024, Cornell University**

Teaching Assistant..

CSCI2040: Introduction to Python	**Fall 2021, Fall 2022, Spring 2023, Fall 2023, CUHK**
CSCI1510: Computer Principles and C Programming	**Spring 2022, CUHK**

SKILLS

Programming Skills: Python, Matlab, C.
Languages: English (IELTS: 7.0) and Mandarin Chinese (native language).

Academic Services

Reviewer for: Neurips (top reviewer of Neurips 2024), ICLR, ICML, L4DC, Artificial Intelligence,
Transactions on Pattern Analysis and Machine Intelligence.