

# Zhiyong Wang | Curriculum Vitae

The University of Edinburgh

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

## Current Position

**The University of Edinburgh**

*Postdoctoral Research Associate*

Working with Prof. Lukasz Szpruch and Prof. Jun Wang (University College London)

**The United Kingdom**

*Sep. 2025– Sep. 2026 (expected)*

## Education

**The Chinese University of Hong Kong**

*Ph.D. in Computer Science and Engineering*

ANSR Lab, supervised by Prof. John C.S. Lui (ACM/IEEE Fellow)

**Hong Kong, China**

*Aug. 2021–Jul. 2025*

**Cornell University**

*Visiting Ph.D. in Computer Science and Engineering*

Supervised by Prof. Wen Sun

**Ithaca, New York, USA**

*Mar. 2024–Oct. 2024*

**Huazhong University of Science and Technology**

*B.E. in Electronic Information Engineering*

Advanced Class in Mathematics and Physics for Information Science

**Wuhan, China**

*Sep. 2017–Jun. 2021*

## 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)

- **Efficient Controllable Diffusion via Optimal Classifier Guidance**,  
Owen Oertell\*, Shikun Sun\*, Yiding Chen\*, Jin Peng Zhou, Zhiyong Wang, Wen Sun.  
In submission.
- **T-POP: Test-Time Personalization with Online Preference Feedback**,  
Zikun Qu, Min Zhang, Mingze Kong, Xiang Li, Zhiwei Shang, Zhiyong Wang, Yikun Ban, Shuang Qiu, Yao Shu, Zhongxiang Dai.  
In submission.
- **FedPOB: Sample-Efficient Federated Prompt Optimization via Bandits**,  
Pingchen Lu, Zhi Hong, Zhiwei Shang, Zhiyong Wang, Yikun Ban, Yao Shu, Min Zhang, Shuang Qiu, Zhongxiang Dai.  
In submission.
- **Self-Reflective Generation at Test Time**,  
Jian Mu, Qixin Zhang, Zhiyong Wang, Menglin Yang, Shuang Qiu, Chengwei Qin, Zhongxiang Dai, Yao Shu,  
In submission.
- **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.

- **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.
- **Federated Linear Dueling Bandits**,  
Xuhan Huang, Yan Hu, Zhiyan Li, Zhiyong Wang, Benyou Wang, Zhongxiang Dai,  
In submission.
- **Cascading Bandits Robust to Adversarial Corruptions**,  
Jize Xie, Cheng Chen, Zhiyong Wang, Shuai Li,  
In submission.

## **Publications (\* denotes equal contribution, # denotes corresponding author)**

- **Learning Across the Gap: Hybrid Multi-armed Bandits with Heterogeneous Offline and Online Data**,  
Qijia He, Minghan Wang, Xutong Liu, Zhiyong Wang, Fang Kong,  
Accepted in the Thirty-Ninth Annual Conference on Neural Information Processing Systems (NeurIPS),  
2025.
- **Provable 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.  
Accepted in the Forty-Second International Conference on Machine Learning (ICML), 2025.
- **Online Clustering of Dueling Bandits**,  
Zhiyong Wang, Jiahang Sun, Mingze Kong, Jize Xie, Qinghua Hu, John C.S. Lui, Zhongxiang Dai,  
Accepted in the Forty-Second International Conference on Machine Learning (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,  
Accepted in the Forty-Second International Conference on Machine Learning (ICML), 2025.
- **Model-based RL as a Minimalist Approach to Horizon-Free and Second-Order Bounds**,  
Zhiyong Wang, 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**,  
Zhiyong Wang, 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\*, Zhiyong Wang\*#, 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\*, Zhiyong Wang\*#, 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, Zhiyong Wang, 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\*, Zhiyong Wang\*, 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, Zhiyong Wang,  
Accepted in the Computer Networks. 2024.
  - **Federated Contextual Cascading Bandits with Asynchronous Communication and Heterogeneous Users**,  
Hantao Yang, Xutong Liu, Zhiyong Wang, 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, Zhiyong Wang, Yuedong Xu, John C.S. Lui,  
IEEE International Conference on Computer Communications (INFOCOM), 2024.
  - **Online Clustering of Bandits with Misspecified User Models**,  
Zhiyong Wang, 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**,  
Zhiyong Wang, 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, Zhiyong Wang, 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.

## Internship

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**Microsoft Research Asia**

*Research Intern*

Mentor: Dr. Wei Chen (ACM/IEEE Fellow, Director of Microsoft Research Asia Theory Center)

**Beijing, China**

*Jun. 2023– Sep. 2023*

**Huawei Tech. Investment Co. Ltd (Hong Kong)**

*Research Intern*

Mentor: Dr. Jiancheng Ye

**Hong Kong**

*Jun. 2022–Aug. 2022*

## Invited Talks

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Model-based RL as a Minimalist Approach to Horizon-Free and Second-Order Bounds,

@**John Hopcroft Center of Shanghai Jiao Tong University (SJTU)**, May 2025.

Model-based RL as a Minimalist Approach to Horizon-Free and Second-Order Bounds,

@ **School of Informatics of The University of Edinburgh**, August 2025.

## Honors & Awards

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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, <b>Valeon</b>
<b>National Scholarship twice</b>	2017-2018, 2018-2019, <b>Ministry of Education of China</b>
Merit Student twice (3%)	2017-2018, 2018-2019, <b>HUST</b>
Scholarship for Exploration	2018, <b>Whale Education Foundation</b>
Second Prize in the 11th Mathematical Modeling Competition of Central China	2018, <b>HBSIAM</b>
Scholarship for outstanding academic performance for Freshmen	2017-2018, <b>HUST</b>

## Teaching Experience

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<b>Guest Lecture</b> .....	
CS 6789: Foundations of Reinforcement Learning	<b>Fall 2024, Cornell University</b>
<b>Teaching Assistant</b> .....	
CSCI2040: Introduction to Python	<b>Fall 2021, Fall 2022, Spring 2023, Fall 2023, CUHK</b>
CSCI1510: Computer Principles and C Programming	<b>Spring 2022, CUHK</b>

## Skills

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**Programming Skills:** Python, Matlab, C.

**Languages:** English (IELTS: 7.0) and Mandarin Chinese (native language).

## Academic Services

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**Reviewer for:** Neurips, ICLR, ICML, L4DC, Artificial Intelligence, Transactions on Pattern Analysis and Machine Intelligence (TPAMI).