

Yimu Wang

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Education and Research Experience

University of Waterloo, Computer Science, Ph.D. (96.5/100) May. 2022 - Apr. 2026 (Expected)
Supervised by Prof. Krzysztof Czarnecki. Focusing on **Generalization** and **Multi-modal Learning**.

Tsinghua University, Research Assistant Oct. 2021 – Apr. 2022
Supervised by Prof. Jingjing Liu and Prof. Yang Liu. Focusing on **Cross-modal Retrieval** and **Federated Learning**.

Nanjing University, Computer Science and Technology, M.Sc. Sep. 2018 - Jun. 2021
Supervised by Prof. Lijun Zhang, in LAMDA Group. Focus on **Image Retrieval** and **Optimization**.

Northwestern Polytechnical University, Software Engineering, B.Eng Sep. 2014 - Jun. 2018

Industry Experience

1. **Amazon**, Applied Scientist Intern May. 2025 – Aug. 2025
Focus on cross-modal retrieval.
2. **Amazon**, Applied Scientist Intern Jun. 2024 – Sep. 2024
Focus on graph models.
3. **SONY AI**, Research Intern Feb. 2024 – Apr. 2024
Focus on training image foundation models, mentored by Lingjuan Lv, Weiming Zhuang, and Chen Chen.
4. **Borealis AI** (Royal Bank of Canada), Research Intern Sep. 2023 – Jan. 2024
Focus on training foundation models for financial data, mentored by He Zhao, Ruizhi Deng, and Fred Tung.
5. **Alibaba**, Turing Lab, Research Intern May. 2021 – Sep. 2021
Focus on multi-modal anomaly detection.
6. **Derivatives-China**, Quant Research Intern Jan. 2021 – Apr. 2021
Focus on powerful deep learning systems for A-Shares.
7. **NetEase**, IE, AILab, AI Research Intern Aug. 2020 – Sep. 2020
Focus on the 3D face reconstruction from a single RGB image.
8. **Tencent**, IEG, Lightspeed & Quantum Studios Group, Research Intern Jun. 2020 – Jul. 2020
Focus on abnormal text and image detection mentored by Manjing Zhang.
9. **Megvii (Face++)**, Research Intern Jan. 2018 – Nov. 2019
Focus on GAN, Domain Adaptation, Fine-grained Image Search.

Selected Publications (NeurIPS, ICLR, AAAI, CVPR, ICCV, ACL, EMNLP, NAACL)

Multi-modal Learning (**Retrieval**, **Understanding**, and **Generation**)

1. Hawaii: Hierarchical Visual Knowledge Transfer for Efficient Vision-Language Models
Yimu Wang, Mozhgan Nasr Azadani, Sean Sedwards, Krzysztof Czarnecki
NeurIPS 2025
2. Survey of Video Diffusion Models: Foundations, Implementations, and Applications
Yimu Wang, Xuye Liu, Wei Pang, Li Ma, Shuai Yuan, Paul Debevec, Ning Yu
TMLR 2025
3. LEO-MINI: An Efficient Multimodal Large Language Model using Conditional Token Reduction and Mixture of Multi-Modal Experts
Yimu Wang, Mozhgan Nasr Azadani, Sean Sedwards, Krzysztof Czarnecki
EMNLP 2025

4. OV-SCAN: Semantically Consistent Alignment for Novel Object Discovery in Open-Vocabulary 3D Object Detection
A. Chow, E. Riddell, Yimu Wang, S. Sedwards, K. Czarnecki
ICCV 2025
5. NBDESCRIB: A Dataset for Text Description Generation from Tables and Code in Jupyter Notebooks with Guidelines
Xuye Liu, Tengfei Ma, Yimu Wang, Fengjie Wang, Jian Zhao
Findings of ACL 2025
6. ELIOT: Zero-Shot Video-Text Retrieval through Relevance-Boosted Captioning and Structural Information Extraction
Xuye Liu, Yimu Wang, Jian Zhao
SRW of NAACL 2025
7. DREAM: Improving Video-Text Retrieval Through Relevance-Based Augmentation Using Large Foundation Models
Yimu Wang, Shuai Yuan, Bo Xue, Xiangru Jian, Wei Pang, Mushi Wang, Ning Yu
Annual Conference of the Nations of the Americas Chapter of ACL (NAACL) 2025
8. AIDE: Improving 3D Open-Vocabulary Semantic Segmentation by Aligned Vision-Language Learning
Yimu Wang, Krzysztof Czarnecki ✉
IEEE Winter Conference on Applications of Computer Vision (WACV) 2025
9. Pretext Training Algorithms for Event Sequence Data
Yimu Wang, He Zhao, Ruizhi Deng, Frederick Tung, Greg Mori
Conference on Neural Information Processing Systems (NeurIPS) 2024 Workshop
10. Balance Act: Mitigating Hubness in Cross-Modal Retrieval with Query and Gallery Banks
Yimu Wang ✉, Xiangru Jian, Bo Xue.
Empirical Methods in Natural Language Processing (EMNLP) 2023, **Oral**.
11. Video-Text Retrieval by Supervised Multi-Space Multi-Grained Alignment
Yimu Wang, Peng Shi.
Findings of Empirical Methods in Natural Language Processing (**Findings of EMNLP**) 2023.
12. InvGC: Robust Cross-Modal Retrieval by Inverse Graph Convolution
Xiangru Jian, Yimu Wang ✉.
Findings of Empirical Methods in Natural Language Processing (**Findings of EMNLP**) 2023
13. Multimodal Federated Learning via Contrastive Representation Ensemble
Qiyong Yu, Yimu Wang, Ke Xu, Yang Liu, Jingjing Liu
International Conference on Learning Representations (ICLR) 2023
14. Deep Unified Cross-Modality Hashing by Pairwise Data Alignment
Yimu Wang, Bo Xue, Quan Cheng, Yuhui Chen, and Lijun Zhang ✉
International Joint Conference on Artificial Intelligence (IJCAI) 2021
15. Searching Privately by Imperceptible Lying: A Novel Private Hashing Method with Differential Privacy
Yimu Wang, Shiyin Lu, and Lijun Zhang ✉
ACM International Conference on Multimedia (ACM MM) 2020

Generalization
16. Lost Domain Generalization Is a Natural Consequence of Lack of Training Domains
Yimu Wang, Yihan Wu, Hongyang Zhang
AAAI Conference on Artificial Intelligence (AAAI) 2024
17. Cooperation or Competition: Avoiding Player Domination for Multi-target Robustness by Adaptive Budgets
Yimu Wang, Dinghuai Zhang, Yihan Wu, Heng Huang, Hongyang Zhang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2023, NeurIPS 2022 Workshop

18. An Adversarial Domain Adaptation Network for Cross-Domain Fine-Grained Recognition
Yimu Wang, Ren-Jie Song, Xiu-Shen Wei, and Lijun Zhang ✉
IEEE Winter Conference on Applications of Computer Vision (**WACV**) 2020

Optimization (Bandits)

19. Lexicographic Lipschitz Bandits: New Algorithms and a Lower Bound
Bo Xue, Ji Cheng, Fei Liu, Yimu Wang, Lijun Zhang, and Qingfu Zhang
JMLR 2025

20. Multiobjective Lipschitz Bandits under Lexicographic Ordering
Bo Xue, Ji Cheng, Fei Liu, Yimu Wang, Qingfu Zhang
AAAI Conference on Artificial Intelligence (**AAAI**) 2024

21. Efficient Algorithms for Generalized Linear Bandits with Heavy-tailed Rewards
Bo Xue, Yimu Wang, Yuanyu Wan, Jinfeng Yi, and Lijun Zhang ✉
Conference on Neural Information Processing Systems (**NeurIPS**) 2023

22. Nearly Optimal Regret for Stochastic Linear Bandits with Heavy-Tailed Payoffs
Bo Xue, Guanghui Wang, Yimu Wang, and Lijun Zhang ✉
International Joint Conference on Artificial Intelligence (**IJCAI**) 2020

Selected Honors and Awards

1. David R. Cheriton Graduate Scholarship, University of Waterloo	Fall 2024
2. NAACL 2025 Volunteer	May. 2025
3. AAAI 2024 Travel and Diversity & Inclusion Award	Jan. 2024
4. EMNLP 2023 Diversity and Inclusion Award	Nov. 2023
5. CVPR 2023 Travel Award and Diversity, Equity & Inclusion Award	Jun. 2023
6. QueerInAI Graduate Application Award	Dec. 2021