

# Yizhou Wang

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## RESEARCH INTERESTS

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AI, LLM, Computer Vision

## EDUCATION

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### Northeastern University (NEU)

*Ph.D., Computer Engineering, College of Engineering*

Advisor: Prof. [Yun Raymond Fu](#)

**Boston, U.S.**

*Sep 2020 - Apr 2026 (expected)*

### Northeastern University (NEU)

*M.S., Electrical and Computer Engineering, College of Engineering*

**Boston, U.S.**

*Sep 2020 - Aug 2023*

### Xi'an Jiaotong University (XJTU)

*B.S., [National Honors Science Program \(Mathematics\)](#)*

**Xi'an, China**

*Aug 2016 - Jun 2020*

### Georgia Institute of Technology (GaTech)

*Georgia Tech School of Mathematics Visiting Honors Student Program*

**Atlanta, USA**

*Jan 2019 - May 2019*

## WORKING EXPERIENCE

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### SMILE Lab, NEU

*Research Assistant, working on LLM, MLLM and Anomaly Detection*

Advisor: Prof. [Yun Raymond Fu](#)

**Boston, U.S.**

*Sep 2021 - Now*

### Adobe Photoshop

*AI/ML Applied Research Scientist Intern, MLLM for Image Composition & Segmentation*

Mentors: Dr. [Lingzhi Zhang](#), Dr. [Mang tik Chiu](#), Dr. [Xiaohang Zhan](#), Dr. [Connelly Barnes](#), Dr. [Yuqian Zhou](#), Dr. [Qing Liu](#), Dr. [Eli Shechtman](#), Dr. [Zhe Lin](#), Dr. [Zijun Wei](#), Dr. [Holly Huey](#)

Manager: Dr. [Sohrab Amirghodsi](#)

**Seattle, U.S.**

*May 2024 - Now*

### Adobe Research

*Research Intern, Alignment in Video LLM*

Mentors: Dr. [Gang Wu](#), Dr. [Ruiyi Zhang](#), Dr. [Haoliang Wang](#), Dr. [Uttaran Bhattacharya](#)

Manager: Dr. [Saayan Mitra](#)

**San Jose, U.S.**

*May 2023 - Dec 2023*

### Mitsubishi Electric Research Laboratories (MERL)

*Research Intern, Zero-shot 3D Anomaly Localization*

Mentor: Dr. [Kuan-Chuan Peng](#)

**Cambridge, U.S.**

*May 2022 - Sep 2022*

### Imagine: Image Intelligence Group, XJTU

*Research Assistant, Deep unfolded iterative algorithm for medical imaging*

Advisor: Prof. [Jian Sun](#)

**Xi'an, China**

*Jun 2020 - Aug 2020*

### FLASH Group, GaTech

*Research Assistant, Theory of Generative Adversarial Imitation Learning*

Advisor: Prof. [Tuo Zhao](#)

**Atlanta, USA**

*Jan 2019 - May 2019*

**PUBLICATIONS** (All my first-authored papers on applied AI are open-sourced except for some of the ones within internship companies, which code can not be released due to company policies. \* denotes equal contribution or

## alphabetic order)

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### Accepted Papers.....

#### Conference Papers

- **Ref-Adv: Exploring MLLM Visual Reasoning in Referring Expression Tasks**  
Qihua Dong, Kuo Yang, Lin Ju, Handong Zhao, Yitian Zhang, **Yizhou Wang**, Huimin Zeng  
Jianglin Lu and Yun Fu  
*International Conference on Learning Representations (ICLR)*, 2026
- **GmNet: Revisiting Gating Mechanisms From A Frequency View**  
Yifan Wang, Xu Ma, Yitian Zhang, **Yizhou Wang**, Zhongruo Wang, Sung-Cheol Kim,  
Vahid Mirjalili, Vidya Renganathan and Yun Fu  
*International Conference on Learning Representations (ICLR)*, 2026
- **D-CoDe: Scaling Image-Pretrained VLMs to Video via Dynamic Compression and Question Decomposition**  
Yiyang Huang, **Yizhou Wang** and Yun Fu  
*Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2025 [[Paper](#)][[Code](#)]
- **Emergent Representation Convergence in Foundation Models: A Survey**  
Jianglin Lu, Hailing Wang, Yi Xu, **Yizhou Wang**, Kuo Yang and Yun Fu  
*Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2025 [[Paper](#)][[Code](#)]
- **Cautious Next Token Prediction**  
**Yizhou Wang**, Lingzhi Zhang, Yue Bai, Mang Tik Chiu, Zhengmian Hu, Mingyuan Zhang, Qihua Dong, Yu Yin,  
Sohrab Amirghodsi and Yun Fu  
*Annual Meeting of the Association for Computational Linguistics (ACL)*, 2025 [[Paper](#)][[Code](#)]
- **Towards Zero-shot 3D Anomaly Localization**  
**Yizhou Wang**, Kuan-Chuan Peng and Yun Fu  
*IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2025, **Oral (top 8%)** [[Paper](#)][[Website](#)]
- **Through the Theory of Mind's Eye: Reading Minds with Multimodal Video Large Language Models**  
Zhanwen Chen, Tianchun Wang, **Yizhou Wang**, Michal Kosinski, Xiang Zhang, Yun Fu and Sheng Li  
*International Joint Conference on Neural Networks (IJCNN)*, 2025 [[arXiv](#)]
- **Rewrite the stars**  
Xu Ma, Xiyang Hu, Yue Bai, **Yizhou Wang**, Yun Fu  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024 [[Paper](#)][[Code](#)]
- **Don't Judge by the Look: A Motion Coherent Augmentation for Video Recognition**  
Yitian Zhang, Yue Bai, Huan Wang, **Yizhou Wang** and Yun Fu  
*International Conference on Learning Representations (ICLR)*, 2024 [[Paper](#)][[Code](#)]
- **Momentum is All You Need for Data-Driven Adaptive Optimization**  
**Yizhou Wang\***, Yue Kang\*, Can Qin, Huan Wang, Yi Xu, Yulun Zhang and Yun Fu  
*IEEE International Conference on Data Mining (ICDM)*, 2023 [[Paper](#)][[Code](#)]
- **Concentric Ring Loss for Face Forgery Detection**  
Yu Yin, Yue Bai, **Yizhou Wang** and Yun Fu  
*IEEE International Conference on Data Mining (ICDM)*, 2023 [[Paper](#)]
- **Making Reconstruction-based Method Great Again for Video Anomaly Detection**  
**Yizhou Wang**, Can Qin, Yue Bai, Yi Xu, Xu Ma and Yun Fu  
*IEEE International Conference on Data Mining (ICDM)*, 2022 [[arXiv](#)][[Code](#)]
- **Self-supervision Meets Adversarial Perturbation: A Novel Framework for Anomaly Detection**  
**Yizhou Wang**, Can Qin, Rongzhe Wei, Yi Xu, Yue Bai and Yun Fu  
*ACM International Conference on Information and Knowledge Management (CIKM)*, 2022 [[Paper](#)][[Code](#)]
- **Robust Semi-supervised Domain Adaptation against Noisy Labels**  
Can Qin, **Yizhou Wang** and Yun Fu  
*ACM International Conference on Information and Knowledge Management (CIKM)*, 2022 [[Paper](#)]
- **MemREIN: Rein the Domain Shift for Cross-Domain Few-Shot Learning**  
Yi Xu, Lichen Wang, **Yizhou Wang**, Can and Yun Fu  
*International Joint Conferences on Artificial Intelligence (IJCAI)*, 2022 [[Paper](#)]

- **Adaptive Trajectory Prediction via Transferable GNN**  
Yi Xu, Lichen Wang, **Yizhou Wang** and Yun Fu  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022 [[arXiv](#)]
- **On Computation and Generalization of Generative Adversarial Imitation Learning**  
Minshuo Chen, **Yizhou Wang**, Tianyi Liu, Zhuoran Yang, Xingguo Li, Zhaoran Wang and Tuo Zhao  
*International Conference on Learning Representations (ICLR)*, 2020 [[arXiv](#)]  
*NeurIPS 2019 Optimization Foundations for Reinforcement Learning Workshop* (Spotlight)

#### Journal Papers

- **SLA<sup>2</sup>P: Self-supervised Anomaly Detection with Adversarial Perturbation**  
**Yizhou Wang**, Can Qin, Rongzhe Wei, Yi Xu, Yue Bai and Yun Fu  
*IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2024 [[arXiv](#)][[Paper](#)][[Code](#)]
- **An unrolled Implicit Regularization Network for Joint Image and Sensitivity Estimation in Parallel MR Imaging with Convergence Guarantee**  
Yan Yang\*, **Yizhou Wang\***, Jiazhen Wang, Jian Sun and Zongben Xu  
*SIAM Journal on Imaging Sciences (SIIMS)*, 2023. [[Paper](#)]
- **Self-Directed Online Machine Learning for Topology Optimization**  
Changyu Deng, **Yizhou Wang**, Can Qin, Yun Fu and Wei Lu  
*Nature Communications (NC)*, 2022. [[arXiv](#)][[Paper](#)][[Code](#)][[Tech Xplore News](#)]

#### Preprints

- **VaQuitA: Enhancing Alignment in LLM-Assisted Video Understanding**  
**Yizhou Wang**, Ruiyi Zhang, Haoliang Wang, Uttaran Bhattacharya, Yun Fu and Gang Wu  
Under review [[arXiv](#)]
- **Unveiling the Unseen: A Comprehensive Survey on Explainable Anomaly Detection in Images and Videos**  
**Yizhou Wang\***, Dongliang Guo\*, Sheng Li, Octavia Campus and Yun Fu  
Major Revision at *TPAMI* [[arXiv](#)][[Code](#)]
- **Rethinking Adam: A Twofold Exponential Moving Average Approach**  
**Yizhou Wang**, Yue Kang, Can Qin, Yi Xu, Huan Wang, Yulun Zhang and Yun Fu  
*New England Computer Vision Workshop (NECV)*, 2022 (Oral) [[arXiv](#)][[Code](#)]
- **Trajectory Prediction Meets Large Language Models: A Survey**  
Yi Xu, Ruining Yang, Yitian Zhang, **Yizhou Wang**, Jianglin Lu, Mingyuan Zhang, Lili Su, Yun Fu  
Under review [[arXiv](#)][[Code](#)]
- **Boosting Large Language Models with Mask Fine-Tuning**  
Mingyuan Zhang\*, Yue Bai\*, Huan Wang, **Yizhou Wang**, Qihua Dong and Yun Fu  
Under review [[arXiv](#)][[Code](#)]
- **Efficient Reasoning with Hidden Thinking**  
Xuan Shen, **Yizhou Wang**, Xiangxi Shi, Yanzhi Wang, Pu Zhao and Jiuxiang Gu  
Under review [[arXiv](#)][[Code](#)]

#### Book

- **Human Activity Recognition and Anomaly Detection**  
Kuan-Chuan Peng, **Yizhou Wang**, Ziyue Li, Zhenghua Chen, Jianfei Yang, Sungho Suh, Min Wu  
Part of the book series: **Communications in Computer and Information Science (CCIS, volume 2201)** [[Link](#)]

## SELECTED PRESENTATIONS

- Oral report at [CAS SIAM](#), Online 2023
- Oral report at [AI2healthcare](#) ([Talk](#) [[Video](#)]), Online 2023
- Oral presentation at [New England Computer Vision Workshop](#), MIT, Boston, MA 2022

## SERVICES

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### Conference Session Chair.....

- SIAM International Conference on Data Mining (SDM), 2024: Session 10 (Text, Web, Social Media)

### Workshop Organization.....

- the Workshop on Anomaly Detection with Foundation Models in conjunction with IJCAI 2024

### Conference Reviewer.....

ACL ARR Jan 2026; ICML 2022, 2023, 2024, 2025, 2026; ICML 2025 Position Paper Track; NeurIPS 2021, 2022, 2023, 2024; NeurIPS 2025 Datasets and Benchmarks Track; ICLR 2022, 2024, 2025, 2026; CVPR 2022, 2023, 2024, 2025, 2026; ICCV 2023, 2025; ECCV 2022, 2024, 2026; SIGGRAPH 2026; WACV 2026; AISTATS 2025; KDD 2023; AAAI 2023; IJCAI 2023, 2024; SDM 2024; ACM MM 2025; ACM MM 2025 Datasets Track; ACM MM Asia 2025; PAKDD 2023; ICME 2022; ACCV 2024; CVPR Workshop on Fair, Data-efficient, and Trusted Computer Vision, 2024, 2025; CVPR Workshop on Multimodal Algorithmic Reasoning, 2024; ICCV Workshop on Analysis and Modeling of Faces and Gestures, 2023; ECCV Workshop on Unlearning and Model Editing, 2024; ECCV Workshop on Vision With Biased or Scarce Data, 2022; AAAI Workshop on Artificial Intelligence with Biased or Scarce Data, 2024; AAAI Workshop on Scalable and Efficient Artificial Intelligence Systems, 2025

### Journal Reviewer.....

IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), International Journal of Computer Vision (**IJCV**), IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), Neural Networks, Pattern Recognition (**PR**), ACM Transactions on Knowledge Discovery from Data (**TKDD**), IEEE Internet of Things Journal (**IoT**), Knowledge and Information Systems (**KAIS**), Journal of Big Data, International Journal of Fuzzy Systems (**IJFS**), IEEE Transactions on Intelligent Vehicles (**IEEE Trans. Veh. Technol.**), IEEE Computational Intelligence Magazine (**CIM**)

## SELECTED AWARDS

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| • Best Reviewer Award of AISTAT 2025 (126 recipients worldwide)  | 2025 |
| • SDM Doctoral Forum Travel Award  | 2024 |
| • IEEE ICDM NSF Student Travel Award   | 2022 |
| • SIGIR Student Travel Grant   | 2022 |
| • Honorary graduate of Qian Xuesen College, XJTU   | 2020 |
| • National Zhufeng 1st Scholarship (Pilot Scheme of Top-notch Talent Cultivation in Basic Disciplines) | 2019 |
| • XJTU Pengkang Scholarship (Top 1.5%)   | 2018 |
| • National Endeavor Scholarship (Top 2%)   | 2017 |

## Teaching Experience

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### Teaching Assistant (TA).....

- EECE 7398 ST: Advances in Deep Learning, Fall 2024
- EECE 5642: Data Visualization, Northeastern University, Spring 2023 and Spring 2024
- DS 5230: Unsupervised Machine Learning, Northeastern University, Fall 2023

## PROGRAMMING LANGUAGES

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Python, MATLAB, C, C++, C#, R