

# Han Wang

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## EDUCATION

**Zhejiang University, Hang Zhou, China**  
*Undergraduate Major in Electronic Engineering*

Sept. 2020 – June 2024  
GPA: 3.94/4.00

## RESEARCH EXPERIENCE

### Graph-Theoretical Framework for OOD Generalization and Detection

May 2023 – Oct. 2023

*Advisor: Prof. Sharon Li, University of Wisconsin-Madison*

*Under Review*

- Propose a novel graph-theoretical framework for understanding both OOD generalization and detection
- Present theoretical insight by analyzing closed-form solutions for the OOD generalization and detection error
- Evaluate the performance through a set of experiments and provide empirical evidence of robustness and alignment with our theoretical analysis

### Disentangled MAE for Unsupervised Domain Generalization

Oct. 2022 – Aug. 2023

*Advisor: Prof. Tat-Seng Chua, National University of Singapore, NExT++ Lab*

*Under Review*

- Devise a disentangling MAE framework to discover the disentangled representations that faithfully reveal the intrinsic features and superficial variations in an unsupervised manner
- Outperform state-of-the-art unsupervised domain generalization and domain generalization baselines

### Test-time training in Text-Video Retrieval

Jan. 2023 – May. 2023

*Advisor: Prof. Fei Wu, Zhejiang University, DCD Lab*

- Introduce the test-time training paradigm to the text-video retrieval task
- Design two modules: the Counterfactual Hierarchical Rebalancing module and the Causal Bias Correction module
- Introduce a large-scale cross-domain dataset specified for text-video retrieval

### Video Grounding guided by Visual Knowledge

June 2022 – Dec. 2022

*Advisor: Prof. Fei Wu, Zhejiang University, DCD Lab*

*CVPR 2023*

- Introduce hierarchical video language decomposition and alignment for the spatio-temporal video grounding task to alleviate the spurious correlation
- Propose a framework which consists of the cross-model hierarchical understanding and decomposition structure alignment
- Achieve state-of-the-art performance beyond weakly supervised methods, even surpass some supervised methods

## PUBLICATIONS

- **Han Wang**, Yiyu Sun, Yixuan Li. A graph-theoretic framework for joint OOD generalization and detection. *Under review*.
- An Zhang\*, **Han Wang\***, Xiang Wang, Wei Ji, Yicong Li, Tat-Seng Chua. Disentangling Masked Autoencoders for Unsupervised Domain Generalization. *Under review*.
- Mengze Li\*, **Han Wang\***, Wenqiao Zhang, Jiaxu Miao, Wei Ji, Zhou Zhao, Shengyu Zhang, Fei Wu. Winner: weakly-supervised hierarchical decomposition and alignment for spatio-temporal video grounding. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2023.

## PROJECTS

### Auto-detection of Illegal Cycling System

Apr. 2021 – Nov. 2021

*Regulating the non-motorized lanes cycling in Zhejiang University*

*Zhejiang University*

- Utilize OpenPoses library to locate the position of joints and gradient boosting decision tree to classify whether the person is cycling illegally

## HONORS

The First-Class Scholarship for outstanding student, Zhejiang University (Top 3%)

Oct. 2021

The Second-Class Scholarship for outstanding student, Zhejiang University (Top 5%)

Oct. 2022

Zhejiang Province Government Scholarship (Top 10%)

Nov. 2022

## SELECTED COURSES&SKILLS

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**Math:** Probability and Mathematical Statistics, Information Theory, Partial Differential Equations

**Systems:** Computer Architecture, Computer Networks, Introduction to Computing Systems

**Programming Languages:** Python, C/C++, Matlab, CUDA, VHDL/Verilog

**Languages:** Chinese (native), English (TOEFL 100)