Han Wang

hanwang3301@gmail.com | rookiehb.github.io

EDUCATION

Zhejiang University, *Hang Zhou, China*   Sept. 2020 – June 2024
Undergraduate Major in Electronic Engineering   *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
- Proposal 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**, 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

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)