

# Wanhua Li

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## Academic Employment

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### School of Engineering and Applied Sciences, Harvard University

Postdoctoral Fellow, working with Prof. Hanspeter Pfister

Boston, USA  
Oct. 2022 - Present

## Education

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### Department of Automation, Tsinghua University

Ph.D. in Computer Vision

Advisors: Prof. Jiwen Lu, and Prof. Jianjiang Feng

GPA: 3.9/4.0, Top 1/76

Beijing, China  
Aug. 2017 - Jun. 2022

### School of Data and Computer Science, Sun Yat-Sen University

B.E. in Computer Science

GPA: 4.0/4.0, Top 1/118

Guangzhou, China  
Aug. 2013 - Jun. 2017

## Work Experiences

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### Visual Computing Group at Microsoft Research Asia (MSRA)

Research assistant, working with Dr. Qi Dai and Dr. Han Hu

Jun. 2022 - Oct. 2022

## Publications

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\* indicates equal contribution, ✉ indicates corresponding author

### Peer-Reviewed Conference Publications

- [1] Wanhua Li\*, Zibin Meng\*, Jiawei Zhou, Donglai Wei, Chuang Gan, Hanspeter Pfister  
**SocialGPT: Prompting LLMs for Social Relation Reasoning via Greedy Segment Optimization**  
*Conference on Neural Information Processing Systems (NeurIPS), 2024*
- [2] Ye Liu, Jixuan He, Wanhua Li✉, Junsik Kim, Donglai Wei, Hanspeter Pfister, Chang Wen Chen✉  
**R<sup>2</sup>-Tuning: Efficient Image-to-Video Transfer Learning for Video Temporal Grounding**  
*European Conference on Computer Vision (ECCV), 2024*
- [3] Minghan Qin\*, Wanhua Li\*✉, Jiawei Zhou\*, Haoqian Wang✉, Hanspeter Pfister  
**LangSplat: 3D Language Gaussian Splatting**  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024 (Highlight)*
- [4] Kento Nishi, Junsik Kim, Wanhua Li, Hanspeter Pfister  
**Joint-Task Regularization for Partially Labeled Multi-Task Learning**  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024*
- [5] Zhiyi Shi, Junsik Kim, Wanhua Li, Yicong Li, Hanspeter Pfister  
**MoRA: LoRA Guided Multi-Modal Disease Diagnosis with Missing Modality**  
*International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2024*
- [6] Junsik Kim, Zhiyi Shi, Davin Jeong, Johannes Knittel, Helen Y. Yang, Yonghyun Song, Wanhua Li, Yicong Li, Dalit Ben-Yosef, Daniel Needleman, Hanspeter Pfister  
**Multimodal Learning for Embryo Viability Prediction in Clinical IVF**  
*International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2024*
- [7] Devaansh Gupta, Siddhant Kharbanda, Jiawei Zhou, Wanhua Li, Hanspeter Pfister, and Donglai Wei  
**CLIPTrans: Transferring Visual Knowledge with Pre-trained Models for Multimodal Machine Translation**  
*IEEE International Conference on Computer Vision (ICCV), 2023*
- [8] Shuai Shen, Wanhua Li, Xiaobing Wang, Dafeng Zhang, Zhezhu Jin, Jie Zhou, and Jiwen Lu  
**CLIP-Cluster: CLIP-Guided Attribute Hallucination for Face Clustering**  
*IEEE International Conference on Computer Vision (ICCV), 2023*

- [9] Shuai Shen, Wenliang Zhao, Zibin Meng, **Wanhua Li**, Zheng Zhu, Jie Zhou, and Jiwen Lu  
**DiffTalk: Crafting Diffusion Models for Generalized Audio-Driven Portraits Animation**  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023
- [10] **Wanhua Li\***, Xiaoke Huang\*, Zheng Zhu, Yansong Tang, Xiu Li, Jie Zhou, and Jiwen Lu  
**OrdinalCLIP: Learning Rank Prompts for Language-Guided Ordinal Regression**  
*Conference on Neural Information Processing Systems (NeurIPS)*, 2022
- [11] **Wanhua Li**, Zhexuan Cao, Jianjiang Feng, Jie Zhou, and Jiwen Lu  
**Label2Label: A Language Modeling Framework for Multi-Attribute Learning**  
*European Conference on Computer Vision (ECCV)*, 2022
- [12] Shuai Shen, **Wanhua Li**, Zheng Zhu, Yueqi Duan, Jie Zhou, and Jiwen Lu  
**Learning Dynamic Facial Radiance Fields for Few-Shot Talking Head Synthesis**  
*European Conference on Computer Vision (ECCV)*, 2022
- [13] **Wanhua Li**, Xiaoke Huang, Jiwen Lu, Jianjiang Feng, and Jie Zhou  
**Learning Probabilistic Ordinal Embeddings for Uncertainty-Aware Regression**  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021
- [14] **Wanhua Li**, Shiwei Wang, Jiwen Lu, Jianjiang Feng, and Jie Zhou  
**Meta-Mining Discriminative Samples for Kinship Verification**  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021
- [15] Shuai Shen, **Wanhua Li**, Zheng Zhu, Guan Huang, Dalong Du, Jiwen Lu, and Jie Zhou  
**Structure-Aware Face Clustering on a Large-Scale Graph with  $10^7$  Nodes**  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021
- [16] Bingyao Yu, **Wanhua Li**, Xiu Li, Jiwen Lu, and Jie Zhou  
**Frequency-Aware Spatiotemporal Transformers for Video Inpainting Detection**  
*IEEE International Conference on Computer Vision (ICCV)*, 2021
- [17] **Wanhua Li**, Yueqi Duan, Jiwen Lu, Jianjiang Feng, and Jie Zhou  
**Graph-Based Social Relation Reasoning**  
*European Conference on Computer Vision (ECCV)*, 2020
- [18] **Wanhua Li**, Jiwen Lu, Jianjiang Feng, Chunjing Xu, Jie Zhou and Qi Tian  
**BridgeNet: A Continuity-Aware Probabilistic Network for Age Estimation**  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019
- [19] **Wanhua Li**, Yingqiang Zhang, Kangchen Lv, Jiwen Lu, Jianjiang Feng, and Jie Zhou  
**Graph-Based Kinship Reasoning Network**  
*IEEE International Conference on Multimedia and Expo (ICME)*, 2020, Oral Presentation
- [20] Benchao Li, **Wanhua Li**, Yongyi Tang, Jian-Fang Hu, and Wei-Shi Zheng  
**GL-PAM RGB-D Gesture Recognition**  
*IEEE International Conference on Image Processing (ICIP)*, 2018

### Peer-Reviewed Journal Publications

- [21] Yicong Li, **Wanhua Li\***, Qi Chen\*, Wei Huang\*, Yuda Zou\*, Xin Xiao\*, Kazunori Shinomiya, Pat Gunn, Nishika Gupta, Alexey Polilov, Yongchao Xu, Yueyi Zhang, Zhiwei Xiong, Hanspeter Pfister, Donglai Wei, Jingpeng Wu  
**WASPSYN: A Challenge for Domain Adaptive Synapse Detection in Microwasp Brain Connectomes**  
*IEEE Transactions on Medical Imaging (TMI)*, 2024
- [22] Bingyao Yu, **Wanhua Li**, Xiu Li, Jie Zhou, and Jiwen Lu  
**Uncertainty-aware hierarchical labeling for face forgery detection**  
*Pattern Recognition (PR)*, 2024
- [23] Shuai Shen, **Wanhua Li**, Zheng Zhu, Jie Zhou, and Jiwen Lu  
**STAR-FC: Structure-Aware Face Clustering on Ultra-Large-Scale Graphs**  
*IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI, IF: 24.31)*, 2023
- [24] Shuai Shen\*, **Wanhua Li\***, Xiaoke Huang\*, Zheng Zhu, Jie Zhou, and Jiwen Lu  
**SD-NeRF: Towards Lifelike Talking Head Animation via Spatially-adaptive Dual-driven NeRFs**  
*IEEE Transactions on Multimedia (TMM)*, 2023
- [25] Bingyao Yu, Xiu Li, **Wanhua Li**, Jie Zhou, and Jiwen Lu  
**Discrepancy-aware Meta-learning for Zero-shot Face Manipulation Detection**  
*IEEE Transactions on Image Processing (TIP)*, 2023

- [26] **Wanhua Li**, Jiwen Lu, Abudukelimu Wuerkaixi, Jianjiang Feng, and Jie Zhou  
**MetaAge: Meta-Learning Personalized Age Estimators**  
*IEEE Transactions on Image Processing (TIP)*, 2022
- [27] Hongyi Sun, **Wanhua Li**, Yueqi Duan, Jie Zhou, and Jiwen Lu  
**Learning Adaptive Patch Generators for Mask-Robust Image Inpainting**  
*IEEE Transactions on Multimedia (TMM)*, 2022
- [28] **Wanhua Li**, Jiwen Lu, Abudukelimu Wuerkaixi, Jianjiang Feng, and Jie Zhou  
**Reasoning Graph Networks for Kinship Verification: from Star-shaped to Hierarchical**  
*IEEE Transactions on Image Processing (TIP)*, 2021

## Talks

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- **Learning Probabilistic Ordinal Embeddings for Uncertainty-Aware Regression**  
*Invited Presentation at 2021 Beijing University Academic Forum on Artificial Intelligence* April 2021
- **Graph-Based Kinship Reasoning Network**  
*ICME'2020 Oral Presentation* July 2020
- **BridgeNet: A Continuity-Aware Probabilistic Network for Age Estimation**  
*Invited Presentation at 2019 Beijing University Academic Forum on Artificial Intelligence* March 2019

## Scholarships and Awards

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- NeurIPS Scholar Award 2022
- ICCV Doctoral Consortium Travel Award 2021
- **Weihai Talent Scholarship, Tsinghua** 2021
- **3rd Place in VIPriors Instance Segmentation Challenge at ICCV** 2021
- Outstanding Oral Presentation at 2021 Beijing University Academic Forum on Artificial Intelligence 2021
- **2nd Place in ChaLearn LAP Large-scale Isolated Gesture Recognition Challenge at ICCV** 2017
- Outstanding Undergraduate Thesis, SYSU 2017
- Outstanding Graduate, SYSU 2017
- National Encouragement Scholarship, Ministry of Education of P.R. China 2016
- **National Scholarship, Ministry of Education of P.R. China** 2015
- **National Scholarship, Ministry of Education of P.R. China** 2014

## Grants

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- **Harvard Data Science Initiative Azure Funding**  
*\$40,000 in credit, Harvard University, PI: Wanhua Li* 2023 - 2024
- **HDSI-AI4G Collaboration Azure Grant**  
*\$30,000 in credit, Harvard University, PI: Wanhua Li* 2024 - 2024

## Academic Services

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### Conference Reviewer / PC Member

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
- International Conference on Computer Vision (ICCV)
- European Conference on Computer Vision (ECCV)
- Conference on Neural Information Processing Systems (NeurIPS)
- AAAI Conference on Artificial Intelligence (AAAI)
- International Joint Conference on Artificial Intelligence (IJCAI)
- IEEE International Conference on Multimedia and Expo (ICME)
- IEEE International Conference on Image Processing (ICIP)
- International Conference on Pattern Recognition (ICPR)

- Chinese Conference on Pattern Recognition and Computer Vision (PRCV)
- IEEE International Conference on Automatic Face and Gesture Recognition (FG)
- ACM SIGGRAPH

### **Journal Reviewer**

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Image Processing
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Biometrics, Behavior, and Identity Science
- IEEE Transactions on Artificial Intelligence
- IEEE Transactions on Affective Computing
- IEEE Transactions on Cybernetics
- IEEE Transactions on Multimedia
- IEEE Signal Processing Letters
- International Journal of Computer Vision
- Pattern Recognition
- Neural Networks
- Neurocomputing
- Pattern Recognition Letters
- Journal of Visual Communication and Image Representation
- Knowledge-Based Systems
- Frontiers of Computer Science