

Huabin Liu

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Curriculum Vitae

Bio. I am a 5th-year PhD Student at Shanghai Jiao Tong University, working with [Weiyao Lin](#) on video understanding and analysis. Currently, I'm visiting the University of Amsterdam as a visiting PhD student, advised by [Cees Snoek](#).

Research interests. My previous research work covers : **fine-grained image recognition**, **video understanding**, **few-shot learning**. Currently, I mainly focus on **multi-modality video understanding and reasoning**.

🎓 Education

Dec 2023 – Dec 2024 (expected)	Visiting PhD student , University of Amsterdam (UvA), Netherlands Video & Image Sense Lab (VIS Lab) Advisor : Cees Snoek
Sep 2019 – Jun 2025 (expected)	PhD Candidate in Department of Electronic Engineering, <i>Shanghai Jiao Tong University</i> (SJTU) Institute of Media, Information, and Network (MIN Lab) Advisor : Weiyao Lin
Sep 2015 – Jun 2019	Bachelor of Engineering , <i>Xidian University</i> (XDU), Xi'an Majors in Electromagnetic Fields Micro Wave Technology GPA : 3.72/4.0 Rank : Top 5%

📖 Publications

- [Huabin Liu](#), Xiao Ma, Cheng Zhong, Yang Zhang, Weiyao Lin, “[TimeCraft : Navigate Weakly-Supervised Temporal Grounded Video Question Answering via Bi-directional Reasoning](#)”, accepted by **ECCV**, 2024
video question answering video reasoning temporal grounding
- [Huabin Liu](#), Weixian Lv, John See, Weiyao Lin, “[Task-adaptive Spatial-Temporal Video Sampler for Few-shot Action Recognition](#)”, published in **ACM Multimedia**, 2022.
temporal frame selection spatial region zoom dynamic sampling strategy few-shot action recognition
- [Huabin Liu](#), Weiyao Lin, Tieyuan Chen, Yuxi Li, Shuyuan Li, John See, “[Few-shot Action Recognition via Intra-and Inter-Video Information Maximization](#)”, submitted to International Journal of Computer Vision (**IJCV**), under the 2nd round review
video information maximization few-shot action recognition
- [Huabin Liu](#), Jianguo Li, Dian Li, John See, Weiyao Lin, “[Learning Scale-Consistent Attention Part Network for Fine-grained Image Recognition](#)”, published in *IEEE Transactions on Multimedia* (**TMM**), 2021.
weakly-supervised fine-grained recognition
- Tieyuan Chen*, [Huabin Liu](#)* (**co-first**), Cheng Zhong, Yang Zhang, Weiyao Lin, MECD : Unlocking Multi-event Causal Discovery in Video Reasoning, 2024, accepted by **NeurIPS**, 2024
video causal discovery long-term video understanding
- Hao Wu*, [Huabin Liu](#)* (**co-first**), Yu Qiao, Xiao Sun, “[DIBS : Enhancing Dense Video Captioning with Unlabeled Videos via Pseudo Boundary Enrichment and Online Refinement](#)”, published in **CVPR**, 2024
Dense video captioning large Language model
- Shuyuan Li*, [Huabin Liu](#)* (**co-first**), Rui Qian, Yuxi Li, John See, Mengjuan Fei, Xiaoyuan Yu, Weiyao Lin, “[TA2N : Two-Stage Action Alignment Network for Few-shot Action Recognition](#)” published in **AAAI**, 2022
spatial-temporal action alignment few-shot action recognition
- Weiyao Lin, [Huabin Liu](#), Shizhan Liu, Yuxi Li, Ning Xu, Hongkai Xiong, Guo-Jun Qi, Nicu Sebe “[HiEve : A large-scale benchmark for human-centric video analysis in complex events](#)” accepted by *International Journal of Computer Vision* (**IJCV**), 2023
human-centric video dataset large-scale benchmark co-learning
- Tianyao He, [Huabin Liu](#), Zeling Ni, Yuxi Li, Xiao Ma, Cheng Zhong, Yang Zhang, Yingxue Wang, Weiyao Lin “[Achieving Procedure-Aware Instructional Video Correlation Learning under Weak Supervision from a Collaborative Perspective](#)” published in International Journal of Computer Vision (**IJCV**), 2024
video correlation learning procedure learning metric learning
- Tianyao He, [Huabin Liu](#), Yuxi Li, Xiao Ma, Cheng Zhong, Yang Zhang, Weiyao Lin “[Collaborative Weakly Supervised Video Correlation Learning for Procedure-Aware Instructional Video Analysis](#)” published in **AAAI**, 2024
instructional video step learning procedure verification
- Jiahao Fan, [Huabin Liu](#), Wenjie Yang, John See, Weiyao Lin, “[Speed Up Object Detection on Gigapixel-Level Images With Patch Arrangement](#)” published in **CVPR**, 2022

reinforcement learning object detection super high-resolution

- Rui Qian, Yuxi Li, **Huabin Liu**, John See, Shuangrui Ding, Xian Liu, Dian Li, Weiyao Lin, “Enhancing Self-supervised Video Representation Learning via Multi-level Feature Optimization” published in **ICCV**, 2021

contrastive learning video representation

</> Projects & Experiences

Dec 2023 current	Visiting PhD student, University of Amsterdam, Amsterdam, Netherlands <ul style="list-style-type: none">➤ Exploring video-language models in video causal reasoning and question-answering <p>video reasoning video question answering video-language model</p>
Feb 2023 current	Computer vision research intern, Shanghai AI Laboratory, Shanghai <ul style="list-style-type: none">➤ May-Nov 2023, devised a weakly-supervised framework for dense video captioning using large-scale unlabeled video data. The paper of this work has been accepted by CVPR 2024.➤ Nov-now, exploring the LLM-driven long-term video understanding. <p>video understanding Large language model</p>
Jan 2020 Jun 2020	Organization of HiEve dataset and corresponding challenge 2020, SJTU, ACM MM 2020 <ul style="list-style-type: none">➤ Participant in the data collection, official website design, evaluation server, and organization of challenge. Get the Best Grand Challenge organization award in ACM MM.➤ Responsible for the paper on the HiEve dataset; proposed two novel enhanced baselines for pose estimation and action recognition on HiEve. The paper has been published in IJCV.➤ 🌐: http://humaninevents.org/ <p>Human-centric large-scale video dataset challenge novel enhanced baselines HiEve paper</p>
Jan 2019 Sep 2019	Computer vision research intern, Aibee Inc., Beijing <ul style="list-style-type: none">➤ Jan-Apr 2019, working on an interpretable fine-grained image recognition method. Its performances achieve SOTA at that time. This work was also nominated as an outstanding dissertation for bachelor's degree at Xidian University.➤ May-Sep 2019, devised an attention-based model for fine-grained recognition. The paper has been published in IEEE Transactions on Multimedia, 2021. <p>fine-grained image discriminative part localization weakly supervised multi-scale part selection attention</p>

🔗 Honors & Awards

2024	Founded by China Scholarship Council (CSC) to visit the University of Amsterdam as a researcher for 1 year
Fall 2022	CETC scholarship for Ph.D. students (¥20000).
Fall 2020	Selected as a member of Wu Wenjun AI honorary doctor class in Shanghai Jiao Tong University (<1%).
Spring 2019	Outstanding undergraduate student of Xidian University (XDU).
2015 - 2018	First Prize Scholarship of Xidian University (<4%), 3 times
2015 - 2018	Outstanding Student of Xidian University (<3%), 2 times
Fall 2017	First prize of National college students Mathematical Contest in Shaanxi (<3%).

💡 Self-evaluation

- Work seriously and tidily, with independent thinking and analytical ability.
- A quick learner in new research fields.
- Good communication and cooperation ability.