

Huabin Liu

🔗 Google Scholar 🔗 Personal Website
📞 18821708622 ✉ huabinliu@sjtu.edu.cn
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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. From 12/2024 to 12/2025, I was a visiting PhD student at the University of Amsterdam, advised by [Cees Snoek](#) and [Filip Ilievski](#).

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

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

📖 Publications

- **Huabin Liu**, Filip Ilievski, Cees G. M. Snoek, “[Commonsense Video Question Answering through Video-Grounded Entailment Tree Reasoning](#)”, accepted by **CVPR**, 2025,
video question answering explicit reasoning explainable AI
- **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, Tiejuan 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
- Tiejuan 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 video reasoning video question answering video-language model
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. video understanding Large language model
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/ Human-centric large-scale video dataset challenge novel enhanced baselines HiEve paper
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. fine-grained image discriminative part localization weakly supervised multi-scale part selection attention

🔑 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.