Han Liang

Ph.D. candidate, ShanghaiTech University

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About Me

I'm now a Ph.D. student at VRVC Lab, ShanghaiTech University, working with Prof. Lan Xu and Prof. Jinyi Yu on digital humans. Prior to that, I obtained my B.E. in computer software engineering from UESTC.

My research focuses on the intersection of graphics, vision, and robotics, especially digital humans and embodied AI. My ultimate aspiration is to realize human-centered embodied intelligent agents that liberate us human beings from tedious and heavy work.

I expect to defend my Ph.D. in 2025, and I am now actively looking for full-time positions. I'm also open to any opportunities for cooperation and discussions. If you are interested, please don't hesitate to contact me.

Research Interests

Fields: Computer Vision, Graphics, Robotics

Topics: Digital humans, Embodied agents, Generative AI

Education

ShanghaiTech University — Sep 2020 - 2025 (expected)
Ph.D. in Computer Science — *Advisor: Prof. Lan Xu & Prof. Jingyi Yu*

University of Electronic Science and Technology of China — Sep 2014 - Jun 2018
B.E. in Computer Software Engineering — Rank 7/134 *Advisor: Prof. Qiao Liu*

Selected Publications (complete list)

[1] **Media2Face: Co-speech Facial Animation Generation With Multi-Modality Guidance**
Qingcheng Zhao*, Pengyu Long*, Qixuan Zhang, Dafei Qin, **Han Liang**, Lan Xu†, Jingyi Yu†
ACM SIGGRAPH, 2024

[2] **OMG: Towards Open-vocabulary Motion Generation via Mixture of Controllers**
Han Liang, Jiacheng Bao, Ruichi Zhang, Sihan Ren, Sibei Yang, Xin Chen, Jingyi Yu†, Lan Xu†
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024

[3] **InterGen: Diffusion-based Multi-human Motion Generation under Complex Interactions**
Han Liang, Wenqian Zhang, Wenxuan Li, Jingyi Yu†, Lan Xu†
International Journal of Computer Vision (IJCV), 2024

[4] **HybridCap: Inertia-aid monocular capture of challenging human motions**
Han Liang, Yannan He, Chengfeng Zhao, Mutian Li, Jingya Wang, Jingyi Yu†, Lan Xu†
AAAI Conference on Artificial Intelligence (AAAI), 2023 Oral

[5] **LiDAR-aid Inertial Poser: Large-scale Human Motion Capture by Sparse Inertial and LiDAR Sensors**
Yiming Ren*, Chengfeng Zhao*, Yannan He, Peishan Cong, **Han Liang**, Jingyi Yu, Lan Xu†, Yuexin Ma†
IEEE Transactions on Visualization and Computer Graphics (TVCG), 2023

[6] **ChallenCap: Monocular 3d capture of challenging human performances using multi-modal references**
Yannan He, Anqi Pang, Xin Chen, **Han Liang**, Minye Wu, Yuexin Ma, Lan Xu
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021 Oral

Projects

[1] **SignGPT: Multi-modal Large Sign Language Models.** We propose Sign-X, the most comprehensive and largest multi-modal dataset for Chinese Sign Language (CSL), spanning over 1000 hours and incorporating diverse modalities such as videos, 2D keypoints, 3D SMPL-X skeletons, glosses, and texts. Based on rich data, we pioneer the development of the first Large Sign Language Models (LSLM) to date, equipped with up to 72B parameters. LSLMs cross a spectrum of complex downstream tasks including Sign Language Production (SLP), Translation (SLT), and Recognition (SLR), setting new standards in the field.

[2] **RhyLive: Monocular Full-body Mocap for Real-time Streaming.** Achieving fine-grained capture of the upper body, face, and hands using a single camera. The system has been integrated into the Bilibili Live streaming pipeline. (Demo)

[3] **RhyCap: Sparse-view Real-time Full-body Mocap System.** We propose a lightweight real-time markerless mocap system. With even only three consumer-grade web cameras, the system achieves closing industry-level accuracy. This system is now integrated into the BiliBili virtual Live mocap pipeline. (Demo)

[4] **NIR+VIS+Depth Multi-modal 3D Face Recognition System.** A method based on a latent variable model was proposed, and the recognition top-1 hit ratio of 1:0.5 million closed-set tests was improved from 91.62% to 96.37%. This system has been applied to the Zhuhai-HongKong-Macao Bridge national project and railway stations in Hefei, Urumqi, and other cities.

Awards

National Doctorial Scholarship 2024

National Encouragement Scholarship 2016

Experience

DGene Inc. Jun 2021 - May 2022
Research Intern *Supervisor: Dr. Yingliang Zhang*

Dilusense Inc. Jul 2018 - Jun 2020
3D Vision R&D *Supervisor: Prof. Juyong Zhang*

Graphics&Geometric Computing Laboratory, USTC Oct 2017 - Jun 2018
Visiting Student *Supervisor: Prof. Ligang Liu*

Professional Services

Conference Reviewer: AAAI, ICCV, CVPR, SIGGRAPH

Journal Reviewer: IJCV, TVCG, TMM

Teaching Assistance

CS280 Deep Learning *Instructor: Prof. Xuming He & Prof. Lan Xu*

CS283 Robotics *Instructor: Prof. Laurent Kneip & Prof. Sören Schwertfeger*

Skills

Programming Languages

Python (Pytorch, Pyrender, RL games, Issac gym, and so on.)

C++ (OpenCV, CUDA, and so on.)

Softwares

Visual Studio, Pycharm, Jupyter Notebook, Latex

Unity, Blender, Maya