Yan Zhang

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Professional Summary

I am a postdoc researcher at ETH Zurich for 3 years, and have been studying on digital human technologies. My researches cover human body/motion modeling, generative models, embodied AI, 3D body shape and pose estimation, etc., as well as their applications in mixed reality, architecture design, and healthcare. My goal is to breathe life into digital humans, and to make body motion and appearance capture scalable.

Publications (selective)

Zhang, Yan, and Siyu Tang. "The Wanderings of Odysseus in 3D Scenes." CVPR 2022.

Zhang, Yan, Michael J. Black, and Siyu Tang. "We are more than our joints: Predicting how 3d bodies move." CVPR 2021.

Zhang, Yan, Mohamed Hassan, Heiko Neumann, Michael J. Black, and Siyu Tang. "Generating 3d people in scenes without people." CVPR 2020 **Oral**.

Zhang, Yan, Siyu Tang, Krikamol Muandet, Christian Jarvers, Heiko Neumann. "Local temporal bilinear pooling for fine-grained action parsing." CVPR 2019.

Zhang, Yan, Siyu Tang, He Sun, Heiko Neumann. "Human Motion Parsing by Hierarchical Dynamic Clustering." BMVC 2018.

Zhang, Siwei, Qianli Ma, **Yan Zhang**, Zhiyin Qian, Taein Kwon, Marc Pollefeys, Federica Bogo, Siyu Tang. "Egobody: Human body shape and motion of interacting people from head-mounted devices." ECCV 2022.

Zhang, Siwei, **Yan Zhang**, Federica Bogo, Marc Pollefeys, and Siyu Tang. "Learning motion priors for 4d human body capture in 3d scenes." ICCV 2021 **Oral**.

Zhao, Kaifeng, Shaofei Wang, **Yan Zhang**, Thabo Beeler, and Siyu Tang. "Compositional Human-Scene Interaction Synthesis with Semantic Control." ECCV 2022.

Korrawe Karunratanakul, Jinlong Yang, **Yan Zhang**, Michael J Black, Krikamol Muandet, Siyu Tang. "Grasping field: Learning implicit representations for human grasps." 3DV 2020 **Best Paper Award**

Awards and Service

3DV Best Paper Award	Grasping field: Learning implicit representations for human grasps	*2020*
Max Planck ETH Center for Learning Systems	Associated Postdoc	*2021-now*
Review	Area Chair of 3DV'24, SIGGRAPH Asia'23, CVPR, ICCV, ECCV, TPAMI, 3DV, etc.	
Organizer	ECCV workshop on Human Body, Hands, and Activities from Egocentric and Multi-view Cameras	*2022*

Projects (selective)

Inhabiting the virtual, Flight Assembled Architecture Revisited

ETH Zurich

2021-now

- **Has been featured at the home page of ETH Zurich.**
- Collaboration with Gramazio Kohler Research, architecture department of ETH Zurich.
- A large digital city is populated by diverse digital humans wandering autonomously, powered by generative motion models and RL-based control.
- Developed an system based on Nvidia Omniverse, which synthesizes human motions online.
- On-site exhibition in Guggenheim Museum Bilbao (2022) and Autostadt Wolfsburg (2023).
- As a byproduct, a Hololens 2-based software is developed to place virtual humans in motion into the ETH main building.
- **MY ROLE:** project leader at the computer science department side.

Markerless Interaction Capture in Immersive Design Lab

ETH Zurich

2022-now

- Collaboration with Immersive Design Lab (IDL), architecture department of ETH Zurich.
- Capturing interactive behaviors of people in IDL, based on multiview RGB cameras.
- Extending to volumetric capture system for novel view synthesis.
- Extending to multi-modal capture system, including audio, point cloud, etc.

- **MY ROLE:** project leader at the computer science department side.

Interaction Capture for Mixed Reality — *ETH Zurich*

2021-now

- Capturing human-human interactions and human-scene interactions based on multiview RGBD sensors and Microsoft Hololens
- Funded by Microsoft Swiss Joint Research Center
- An egocentric interaction capture dataset EgoBody has been created.
- **MY ROLE:** advisor and collaborator

SenseEmotion — *Ulm University*

2015-2018

- Pain recognition, behavior understanding, face analysis, etc. for elderly people healthcare.
- Funded by Federal Ministry of Education and Research, Germany, and collaborated with University Hospital Ulm and University of Augsburg, Germany.
- Multimodal capture system including cameras, audio and physiological sensors was developed, and pilot study was performed at the clinic.
- **MY ROLE:** responsible for research and development on behavior understanding systems and algorithms.

Technical skills

Coding and Software PyTorch, Python, C++/CUDA, Blender, Unity, Nvidia Omniverse

Education

Ph.D (Dr.rer.nat.) in Computer Science — *Dec 2015 – July 2020*
University of Ulm, Germany

Dissertation: Human Action Parsing in Untrimmed Videos and its Applications for Elderly People Healthcare
Grade: Sehr gut (magna cum laude).

Computer Science Graduate School — *Apl 2011 – Dec. 2015*
Saarland University, Germany

Grade: 1.6

M.Sc in Electronic Engineering — *Sep. 2009 – Nov. 2010*
University of Manchester, UK

Advanced Control and System Engineering
Grade: distinction

B.Eng in Mechanical Engineering — *Sep. 2005 – Jul. 2009*
Southwest Jiaotong University, China

Mechanical Design, Manufacturing, and Automation
Grade: 85%

Work Experience

ETH Zurich — *2020.01 – Present*
Visiting Researcher (6 months) and then Postdoc Researcher — *Zurich, Switzerland*

Max-Planck Institute for Intelligent Systems — *2018.10 – 2020.01*
Research Assistant Intern — *Tuebingen, Germany*

Ulm University — *2015.12 – 2018.09*
Research Assistant — *Ulm, Germany*

German Cancer Research Center (DKFZ) — *2015.03 – 2015.11*
Research Assistant Intern — *Heidelberg, Germany*

Saarland University — *2012.12 – 2015.02*
Research Assistant — *Saarbrucken, Germany*