# 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, body pose estimation and motion capture, etc, as well as their applications in mixed reality, architecture design, and healthcare.

## 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

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|---|---|---|
| **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 vertical digital city is populated by intelligent digital humans wandering autonomously.
- Developed an system based on Nvidia Omniverse, which synthesizes human motions online.
- Real exhibition in Guggenheim Museum Bilbao, 2021-2023
- As a byproduct, a paper "The Wanderings of Odysseus in 3D Scenes" has been published at CVPR 2022.
- 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.

### 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*