Hongwen Zhang

✉ zhanghongwen@bnu.edu.cn
🔗 https://zhanghongwen.cn
🐙 @HongwenZhang
🎓 Google Scholar
📍 Beijing Normal University,
Beijing 100875, China

EDUCATION

Sept.2015 - Jun.2021	**Institute of Automation, Chinese Academy of Sciences**, Beijing, China Ph.D. in Computer Application Technology, *advised by Prof. Zhenan Sun*
Feb.2019 - Mar.2020	**The University of Sydney**, Sydney, Australia Visiting Student, *advised by Prof. Wanli Ouyang*
Sept.2011 - Jun.2015	**South China University of Technology**, Guangzhou, China B.E. in Automation

WORK EXPERIENCE

Oct.2023 - Current	**Beijing Normal University**, Beijing, China Associate Professor
Sept.2021 - Oct.203	**Tsinghua University**, Beijing, China Postdoctoral Researcher, *advised by Prof. Yebin Liu*

RESEARCH INTERESTS

My research interests focus on human-centered computer vision and graphics, including motion capture, reconstruction, rendering, and the synthesis of digital humans.

PUBLICATIONS

◇ *Human/Hand/Face/Full-body Landmark Localization and Motion Capture*

- **PyMAF-X: Towards Well-aligned Full-body Model Regression from Monocular Images**
  H. Zhang, Y. Tian, Y. Zhang, M. Li, L. An, Z. Sun, Y. Liu
  IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2023.

- **Recovering 3D Human Mesh from Monocular Images: A Survey**
  Y. Tian*, **H. Zhang***, Y. Liu, L. Wang   (* co-first authors)
  IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2023.

- **Learning 3D Human Shape and Pose from Dense Body Parts**
  H. Zhang, J. Cao, G. Lu, W. Ouyang, Z. Sun
  IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2020

- **Adversarial Learning Semantic Volume for 2D/3D Face Shape Regression in the Wild**
  H. Zhang, Q. Li, Z. Sun
  IEEE Transactions on Image Processing (TIP), 2019

- **Combining Data-driven and Model-driven Methods for Robust Facial Landmark Detection**
  H. Zhang, Q. Li, Z. Sun, Y. Liu
  IEEE Transactions on Information Forensics and Security (TIFS), 2018

- **PyMAF: 3D Human Pose and Shape Regression with Pyramidal Mesh Alignment Feedback Loop**
  H. Zhang, Y. Tian, X. Zhou, W. Ouyang, Y. Liu, L. Wang, Z. Sun
  IEEE International Conference on Computer Visionn (ICCV, Oral Paper), 2021

- **Delving Deep into Pixel Alignment Feature for Accurate Multi-view Human Mesh Recovery**
  K. Jia, **H. Zhang**, L. An, Y. Liu
  AAAI Conference on Artificial Intelligence (AAAI), 2023

- **Interacting Attention Graph for Single Image Two-Hand Reconstruction**
  M. Li, L. An, **H. Zhang**, L. Wu, F. Chen, T. Yu, Y. Liu
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR, Oral Paper), 2022

- **DaNet: Decompose-and-aggregate Network for 3D Human Shape and Pose Estimation**
  H. Zhang, J. Cao, G. Lu, W. Ouyang, Z. Sun
  ACM International Conference on Multimedia (ACMMM), 2019

◇ *Human-Scene Interaction and Behavior Understanding*

- **Narrator: Towards Natural Control of Human-Scene Interaction Generation via Relationship Reasoning**
  H. Xuan, X. Li, J. Zhang, **H. Zhang**, Y. Liu, K. Li
  IEEE International Conference on Computer Vision (ICCV), 2023

- **Disentangling and Unifying Graph Convolutions for Skeleton-Based Action Recognition**
  Z. Liu, **H. Zhang**, Z. Chen, Z. Wang, W. Ouyang
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR, Oral Paper), 2020

◇ *Clothed Human Reconstruction and Rendering*

- **Tensor4D: Efficient Neural 4D Decomposition for High-fidelity Dynamic Reconstruction and Rendering**
  R. Shao, Z. Zheng, H. Tu, B. Liu, **H. Zhang**, Y. Liu
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023

- **FloRen: Real-time High-quality Human Performance Rendering via Appearance Flow Using Sparse RGB Cameras**
  R. Shao, L. Chen, Z. Zheng, **H. Zhang**, Y. Zhang, H. Huang, Y. Guo, Y. Liu
  SIGGRAPH Asia Conference Proceedings, 2022

- **DiffuStereo: High Quality Human Reconstruction via Diffusion-based Stereo Using Sparse Cameras**
  R. Shao, Z. Zheng, **H. Zhang**, J. Sun, Y. Liu
  European Conference on Computer Vision (ECCV, Oral Paper), 2022

- **DoubleField: Bridging the Neural Surface and Radiance Fields for High-fidelity Human Reconstruction and Rendering**
  R. Shao, **H. Zhang**, H. Zhang, M. Chen, Y. Cao, T. Yu, Y. Liu
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022

◇ *Animatable Avatar*

- **CloSET: Modeling Clothed Humans on Continuous Surface with Explicit Template Decomposition**
  H. Zhang, S. Lin, R. Shao, Y. Zhang, Z. Zheng, H. Huang, Y. Guo, Y. Liu
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023

- **Leveraging Intrinsic Properties for Non-Rigid Garment Alignment**
  S. Lin, B. Zhou, Z. Zheng, **H. Zhang**, Y. Liu
  IEEE International Conference on Computer Vision (ICCV), 2023

- **CaPhy: Capturing Physical Properties for Animatable Human Avatars**
  Z. Su, L. Hu, S. Lin, **H. Zhang**, S. Zhang, J. Thies, Y. Liu
  IEEE International Conference on Computer Vision (ICCV), 2023

- **Learning Implicit Templates for Point-Based Clothed Human Modeling**
  S. Lin, **H. Zhang**, Z. Zheng, R. Shao, Y. Liu
  European Conference on Computer Vision (ECCV), 2022

- **AvatarCap: Animatable Avatar Conditioned Monocular Human Volumetric Capture**
  Z. Li, Z. Zheng, **H. Zhang**, C. Ji, Y. Liu
  European Conference on Computer Vision (ECCV), 2022

- **Structured Local Radiance Fields for Human Avatar Modeling**
  Z. Zheng, H. Huang, T. Yu, **H. Zhang**, Y. Guo, Y. Liu
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022

◇ *Head Avatar and Face Image Synthesis*

- **HAvatar: High-fidelity Head Avatar via Facial Model Conditioned Neural Radiance Field**
  X. Zhao, L. Wang, J. Sun, **H. Zhang**, J. Suo, Y. Liu
  ACM Transactions on Graphics (TOG), 2023

- **LatentAvatar: Learning Latent Expression Code for Expressive Neural Head Avatar**
  Y. Xu, H. Zhang, L. Wang, X. Zhao, H. Huang, G. Qi, Y. Liu
  SIGGRAPH Conference Proceedings, 2023

- **AvatarMAV: Fast 3D Head Avatar Reconstruction Using Motion-Aware Neural Voxels**
  Y. Xu, L. Wang, X. Zhao, **H. Zhang**, Y. Liu
  SIGGRAPH Conference Proceedings, 2023

- **StyleAvatar: Real-time Photo-realistic Portrait Avatar from a Single Video**
  L. Wang, X. Zhao, J. Sun, Y. Zhang, **H. Zhang**, T. Yu, and Y. Liu
  SIGGRAPH Conference Proceedings, 2023

- **Next3D: Generative Neural Texture Rasterization for 3D-Aware Head Avatars**
  J. Sun, X. Wang, L. Wang, X. Li, Y. Zhang, **H. Zhang**, Y. Liu
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023

- **Towards High Fidelity Face Frontalization in the Wild**
  J. Cao, Y. Hu, **H. Zhang**, R. He, Z. Sun
  International Journal of Computer Vision (IJCV), 2020

- **Learning a High Fidelity Pose Invariant Model for High-resolution Face Frontalization**
  J. Cao, Y. Hu, **H. Zhang**, R. He, Z. Sun
  Advances in Neural Information Processing Systems (NeurIPS), 2018

ACADEMIC SERVICES

Reviewer for Journals: TPAMI, IJCV, TIP, TCVTG, TNNLS, TMM, TCSVT, and CVIU
Reviewer for Conferences: CVPR, ICCV, ECCV, NeurIPS, ICLR, 3DV, and CHI

SELECTED AWARDS

2022	CAS Outstanding Doctoral Dissertation	Chinese Academy of Sciences (CAS)
2021	CAS Presidential Award	Chinese Academy of Sciences (CAS)

PROGRAMMING SKILLS

Deep Learning Frameworks	PyTorch, Caffe
Programming Languages	Python, MATLAB, C/C++
Development Tools	Linux Shell, PyCharm, Visual Studio, Blender, Git

REFEREES

Prof. Yebin Liu	Tsinghua University
Prof. Zhenan Sun	Institute of Automation, Chinese Academy of Sciences
Prof. Wanli Ouyang	The University of Sydney