

Ruizhi Shao

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Education

Tsinghua University

PhD in Computer Vision and Artificial Intelligence, supervised by Yebin Liu

Beijing, China

Sep. 2020 - Now

Nankai University

BE in Computer Science and Technology

Tianjin, China

Sep. 2016 - Jun. 2020

Publications

- [1] **Ruizhi Shao**, Jingxiang Sun, Cheng Peng, Zerong Zheng, Boyao Zhou, Hongwen Zhang, Yebin Liu. “Control4D: Efficient 4D Portrait Editing with Text”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [2] Mengcheng Li, Hongwen Zhang, Yuxiang Zhang, **Ruizhi Shao**, Tao Yu, Yebin Liu. “HHMR: Holistic Hand Mesh Recovery by Enhancing the Multimodal Controllability of Graph Diffusion Models”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [3] Shunyuan Zheng, Boyao Zhou, **Ruizhi Shao**, Boning Liu, Shengping Zhang, Liqiang Nie, Yebin Liu. “Gps-gaussian: Generalizable pixel-wise 3d gaussian splatting for real-time human novel view synthesis”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [4] Xin Huang*, **Ruizhi Shao***, Qi Zhang, Hongwen Zhang, Ying Feng, Yebin Liu, Qing Wang. “Humannorm: Learning normal diffusion model for high-quality and realistic 3d human generation”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [5] Jingxiang Sun, Bo Zhang, **Ruizhi Shao**, Lizhen Wang, Wen Liu, Zhenda Xie, Yebin Liu. “Dreamcraft3d: Hierarchical 3d generation with bootstrapped diffusion prior”, *The Twelfth International Conference on Learning Representations (ICLR)*, 2024.
- [6] Jiajun Zhang, Yuxiang Zhang, Hongwen Zhang, Boyao Zhou, **Ruizhi Shao**, Zonghai Hu, Yebin Liu. “Ins-HOI: Instance Aware Human-Object Interactions Recovery”, Arxiv, 2023.
- [7] Yi Wang, Jian Ma, **Ruizhi Shao**, Qiao Feng, Yu-Kun Lai, Yebin Liu, Kun Li. “HumanCoser: Layered 3D Human Generation via Semantic-Aware Diffusion Model”, Arxiv, 2023.
- [8] Chenming Han, **Ruizhi Shao**, Gaochang Wu, Hang Shao, Yebin Liu. “ViT-MPI: Vision Transformer Multiplane Images for Surgical Single-View View Synthesis”, *International Conference on Artificial Intelligence (CAAI)*, 2023.
- [9] Tiansong Zhou, Jing Huang, Tao Yu, **Ruizhi Shao**, Kun Li. “Hdhuman: High-quality human novel-view rendering from sparse views”, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2023.
- [10] Ying-Tian Liu, Yuan-Chen Guo, Vikram Voleti, **Ruizhi Shao**, Chia-Hao Chen, Guan Luo, Zixin Zou, Chen Wang, Christian Laforte, Yan-Pei Cao, Song-Hai Zhang. “threestudio: a modular framework for diffusion-guided 3D generation”, *International Conference on Computer Vision (ICCV)*, 2023.
- [11] **Ruizhi Shao**, Zerong Zheng, Hanzhang Tu, Boning Liu, Hongwen Zhang, Yebin Liu. “Tensor4D : Efficient Neural 4D Decomposition for High-fidelity Dynamic Reconstruction and Rendering”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023. Accepted as **Highlight**.
- [12] Hongwen Zhang, Siyou Lin, **Ruizhi Shao**, Yuxiang Zhang, Zerong Zheng, Han Huang, Yandong Guo, Yebin Liu. “CloSET: Modeling Clothed Humans on Continuous Surface with Explicit Template Decomposition”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [13] Tiansong Zhou, Jing Huang, **Ruizhi Shao**, Kun Li. “HDhuman: High-quality Human Novel-view Rendering from Sparse Views”, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2023.
- [14] **Ruizhi Shao**, Liliang Chen, Zerong Zheng, Hongwen Zhang, Yuxiang Zhang, Han Huang, Yebin Liu. “FloRen: Real-time High-quality Human Performance Rendering via Appearance Flow Using Sparse RGB Cameras”, *SIGGRAPH Asia*, 2022.
- [15] **Ruizhi Shao**, Zerong Zheng, Hongwen Zhang, Jingxiang Sun, Yebin Liu. “DiffuStereo: High Quality Human Reconstruction via Diffusion-based Stereo Using Sparse Cameras”, *European Conference on Computer Vision (ECCV)*, 2022. Accepted as **Oral**.
- [16] Siyou Lin, Hongwen Zhang, Zerong Zheng, **Ruizhi Shao**, Yebin Liu. “Learning Implicit Templates for Point-Based Clothed Human Modeling”, *European Conference on Computer Vision (ECCV)*, 2022.
- [17] **Ruizhi Shao**, Hongwen Zhang, He Zhang, Mingjia Chen, Yanpei Cao, Tao Yu, Yebin Liu. “DoubleField: Bridging the Neural Surface and Radiance Fields for High-fidelity Human Reconstruction and Rendering”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022.
- [18] **Ruizhi Shao***, Gaochang Wu*, Yuemei Zhou, Ying Fu, Lu Fang, Yebin Liu (* equal contribution). “LocalTrans: A Multiscale Local Transformer Network for Cross-Resolution Homography Estimation”, *International Conference on Computer Vision (ICCV)*, 2021.
- [19] Yang Zheng*, **Ruizhi Shao***, Yuxiang Zhang, Tao Yu, Zerong Zheng, Qionghai Dai, Yebin Liu (* equal contribution). “DeepMultiCap: Performance Capture of Multiple Characters Using Sparse Multiview Cameras”, *International Conference on Computer Vision (ICCV)*, 2021.
- [20] Kun Li, Yali Mao, Yunke Liu, **Ruizhi Shao**, Yebin Liu. “Full-Body Motion Capture for Multiple Closely Interacting Persons”, *Graphical Models*, 2020.

Awards and Honors

- 2019 **Contest:** Silver Medal in “ACM/ICPC Asia-East Continent Final Contest”.
- 2019 **Scholarship:** “Innovation Award of Science and Technology, Nankai University”.
- 2018 **Scholarship:** “China National Scholarship”.
- 2018 **Contest:** Second Prize in “Mathematical Contest in Modeling”.
- 2018 **Contest:** Silver Medal in “ACM/ICPC Asia-East Continent Final Contest”.

Invited Talk

PRCV

2023

Towards High-quality 3D/4D Generation Based on T2I Diffusion Models.

China3DV

2023

Tensor4D: Efficient Neural 4D Decomposition for High-fidelity Dynamic Reconstruction and Rendering.

TechBeat

2022

DoubleField: Bridging the Neural Surface and Radiance Fields for High-fidelity Human Reconstruction and Rendering.

Experiences

OPPO Research

2022

Research Intern. Subject: “Real-time Holographic Rendering for Digital Human”.

Teaching

Teaching assistant of Data Structure in Tsinghua University, AU30250203

2021

Services

- Reviewers: **TPAMI, TMM, TOG, EG, ICCV, ECCV, CVPR, SIGGRAPH**
- Contributor of **threestudio-project/ThreeStudio**: *a unified framework for 3D content creation from text prompts, single images, and few-shot images, by lifting 2D text-to-image generation models.*

Technical Skills

Programming C++, Python, Taichi, Java, JavaScript, HTML/CSS

Software & Typesetting Blender, Photoshop, Premiere, L^AT_EX