Yingxuan You

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Github: https://github.com/kasvii | **Blog**: https://kasvii.github.io

Education

Peking University 2021.09 - 2024.06
Candidate for Master of Science
Computer Application Technology GPA: 3.91 / 4.0 (Top 8%)

Beihang University 2017.09 - 2021.06
Bachelor of Engineering
Automation - Pattern Recognition GPA: 3.84 / 4.0 (Top 5%)

Experience

2021.09 - Present **3D Human Mesh Reconstruction** **Principal Investigator**

- **Main work**: Propose a two-stage non-parametric 3D Human Mesh Reconstruction (HMR) method based on 2D pose input. In the first stage, a graph-aware transformer network is designed to explore the global and local relations of the human skeleton for 3D pose estimation. In the second stage, a cross-attention mechanism is used to regress the mesh vertices from the estimated 3D pose. This method outperforms previous state-of-the-art methods in reconstructed accuracy. **The paper has been accepted by ICASSP 2023**.
- **Extension work**: Extend the single-frame HMR method to the video scenes. This task is decoupled to two parts: 1) video-based 3D pose estimation from image frames and 2) mesh vertices regression by image-guided pose and mesh co-evolution. This method achieves both accurate and smooth motion results. **The paper has been accepted by ICCV 2023**.

2022.07 - Present **Intelligent Service Robot** **Perception Team Leader**

- **Goal**: To enable the robot to perceive the environment and human based on multi-sensor data, and then to provide prior knowledge for subsequent tasks.
- **Main work**: 1) 3D scene reconstruction of an unmanned supermarket: Combine multi-sensor data and SLAM system to reconstruct the 3D RGB dense point cloud map of the supermarket. 2) Human body tracking of the robot: Using data from the depth camera, estimate human position, design tracking logic, and implement the negative feedback algorithm to control the robot's speed and angle, achieving accurate and real-time human body tracking.

2021.09 - 2022.07 **Intelligent Unmanned Supermarket** **CGA Team Member**

- **Goal**: Customer-Goods Association (CGA). To associate the purchased goods with customers.
- **Main work**: Based on the method of nearest and hierarchical matching, associate the goods and customers, achieving an accuracy rate of over 90% in real-scene application.

2021.03 - 2021.08 3D Reconstruction Internship Thinkfree Technology Co., Ltd.

- **Main work**: To build a 3D semantic map for dynamic indoor scenes, combine a visual SLAM system with an instance segmentation network. A two-stage method is proposed to mitigate the impact of dynamic image pixels on localization and mapping: 1) use semantic information to remove predefined dynamic objects; 2) combine multi-view geometric constraints and K-means method to remove the dynamic pixels.
- The proposed method achieves high robustness and accuracy in public datasets. The paper has been published in an SCI journal.
- Collect and establish a house dataset. Assist in porting the algorithm to Android and test the effectiveness in real-world scenarios.

Publications

[1] **You Y**, Liu H, Wang T, et al. Co-Evolution of Pose and Mesh for 3D Human Body Estimation from Video. Accepted by IEEE International Conference on Computer Vision (**ICCV 2023**).
[2] Tang T, **You Y**, Wang T, et al. An Efficient Graph Transformer Network for Video-based Human Mesh Reconstruction. Accepted by CAAI International Conference on Artificial Intelligence (**CICAI 2023**), **Oral** (4%) & **best student paper**.
[3] **You Y**, Liu H, Li X, et al. GATOR: Graph-Aware Transformer with Motion-Disentangled Regression for Human Mesh Recovery from a 2D Pose. Accepted by IEEE International Conference on Acoustics, Speech, and Signal Processing (**ICASSP 2023**).
[4] **You Y**, Wei P, Cai J, et al. MISD-SLAM: Multimodal Semantic SLAM for Dynamic Environments. Wireless Communications and Mobile Computing, 2022.
[5] Cai J, Huang W, **You Y**, et al. SPSD: Semantics and Deep Reinforcement Learning Based Motion Planning for Supermarket Robot. IEICE Transactions on Information and Systems, 2022.

Honors and Awards

- Merit Student Scholarship (Top 5%), Peking University 2022
- Outstanding Graduate (Top 5%) 2021
- Special Prize in Competition Scholarship (Top 2%) 2021
- Excellent Student (Top 5%) 2019, 2020
- First Prize in National College Student Mathematics Competition (Top 1 %) 2018