Haonan Chen

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RESEARCH INTEREST

I am generally interested in **computer vision and robotics, with a specific interest in multimodal AI and embodied AI**. I have participated in several projects on computer vision, robotics, image processing, and reinforcement learning.

EDUCATION

Nanjing University Nanjing, China
B.S. in Computer Science (Elite Class*) Sept. 2020 - Jun. 2024

- GPA 4.514/5.000, Ranking 5/20, (Department) 21/256.

*: The Elite Class selects 20 students from the entire grade for scientific research-oriented training and independent ranking.

PUBLICATIONS

ClothesNet: An Information-Rich 3D Garment Model Repository with Simulated Clothes Environment
Bingyang Zhou, Haoyu Zhou, Tianhai Liang, Qiaojun Yu, Siheng Zhao, Yuwei Zeng, Jun Lv, Siyuan Luo, Qiancai Wang, Xinyuan Yu, Haonan Chen, Cewu Lu, Lin Shao
IEEE International Conference on Computer Vision (ICCV) 2023. [pre-print]

SDV: Simple Double Validation Model-based Offline Reinforcement Learning
Xun Wang, Haonan Chen, Junming Yang, Zhuzhong Qian, Bolei Zhang
European Conference on Artificial Intelligence (ECAI) 2023 [oral] [pre-print]

TieBot: Model-based Learning to Knot a Tie from Visual Demonstration via Differentiable Physics Simulation
Weikun Peng, Jun Lv, Yuwei Zeng, Haonan Chen, Siheng Zhao, Jichen Sun, Cewu Lu, Lin Shao
Conference on Robot Learning (CoRL) 2024 [oral] [pre-print]

EXPERIENCE

NUS CS Department Singapore
Advised by Prof. Lin Shao Jun. 2022 – Present

- **TieBot: Model-based Learning to Knot a Tie from Visual Demonstration via Differentiable Physics Simulation**
  Role in the Project: Conducted an exploration to assess the feasibility of utilizing a deep learning architecture for the identification of keypoints on actual ties. Performed feature matching on the tie-tying video to optimize the mesh's pose and generated a sequence of tie postures in the DiffCloth simulation environment.
- **ClothesNet: A Simulated Clothes Manipulation Environment with 3D Model Repository**
  Role in the Project: Translated meshes xyz in real world to uv in image and generated data. Automatically marked the keypoint of the clothes and employed Pybullet to render numerous images.

NJU CS Department Nanjing, China
Advised by Prof. Zhuzhong Qian Oct. 2022 - Oct. 2023

- **SDV: Simple Double Validation Model-based Offline Reinforcement Learning**
  Role in the Project: Conducted literature research and thought discussions, designed new algorithms, established reinforcement learning models and participated in some experiments.

AWARDS

- The people's scholarship in China 2021, 2022
- Special Scholarship for Undergraduates in Basic Science 2021, 2022
- Outstanding student leader of Nanjing University ($< 1\%$) 2022