Jia-Hui Pan
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Introduction

I am a third-year PhD student in Computer Science at the Chinese University of Hong Kong (CUHK). My primary research interest lies in AI-empowered robotics, with a particular focus on irregular object packing and manipulation. In addition, I also have experience in human video analysis and time series learning and have contributed to several research works on human action quality assessment. By contributing to advancements in these fields, I hope to make a significant impact on applications such as intelligent robots, smart homes, and unmanned logistics.

Education

Sun Yat-sen University (Aug. 2021 - Present)
PhD in Computer Science Supervisor: Prof. Chi-Wing Fu

Sun Yat-sen University (Aug. 2018 - Jul. 2021)
MPhil in Computer Science Supervisor: Prof. Wei-Shi Zheng

Sun Yat-sen University (Aug. 2014 - Jun. 2018)
BSc in Computer Science *GPA: 3.8 out of 4.0*

Experience

Peng Cheng Laboratory, Shenzhen (Sept. 2019 - Dec. 2019.)
Research Intern, AI traffic analysis & human action assessment Supervisor: Prof. Wei-Shi Zheng

Publications

- **Jia-Hui Pan**, Xiaojie Gao, Ka-Hei Hui, Shize Zhu, Yun-Hui Liu, Pheng-Ann Heng and Chi-Wing Fu. "PPN-Pack: Placement Proposal Network for Efficient Robotic Bin Packing" *IEEE Robotics and Automation Letters (RA-L), 2024.*

- Weiliang Tang, **Jia-Hui Pan**, Wei Zhan, Jianshu Zhou, Huaxiu Yao, Yun-Hui Liu, Masayoshi Tomizuka, Mingyu Ding, and Chi-Wing Fu. "Embodiment-Agnostic Action Planning via Object-Part Scene Flow." arXiv preprint arXiv:2409.10032 (2024).

- **Jia-Hui Pan**, Ka-Hei Hui, Xiaojie Gao, Shize Zhu, Yun-Hui Liu, Pheng-Ann Heng and Chi-Wing Fu. "SDF-Pack: Towards Compact Bin Packing with Signed-Distance-Field Minimization" *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023.*

- **Jia-Hui Pan**, Jibin Gao and Wei-Shi Zheng. "Adaptive action assessment" *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2021.*

- **Jia-Hui Pan**, Jibin Gao, and Wei-Shi Zheng. "Action Assessment by Joint Relation Graphs." *In IEEE Conference on Computer Vision (ICCV), 2019.*(**oral presentation**)

- Shao-Jie Zhang, **Jia-Hui Pan**, Jibin Gao and Wei-Shi Zheng. "Adaptive stage-aware assessment skill transfer for skill determination" *IEEE Transactions on Multimedia (TMM), 2023.*

- Jibin Gao, **Jia-Hui Pan**, Shao-Jie Zhang and Wei-Shi Zheng. "Automatic modelling for interactive action assessment" *International Journal of Computer Vision (IJCV), 2022.*

- Shao-Jie Zhang, **Jia-Hui Pan**, Jibin Gao and Wei-Shi Zheng. "Semi-supervised action quality assessment with self-supervised segment feature recovery" *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2022.*

- Jibin Gao, Wei-Shi Zheng, **Jia-Hui Pan**, Chengying Gao, Yaowei Wang, Wei Zeng, and Jianhuang Lai. "An asymmetric modeling for action assessment." *In European Conference on Computer Vision (ECCV), 2020.*

- Jianfang Hu, Wei-Shi Zheng, **Jiahui Pan**, Jianguo Zhang, and JianHuang Lai. "Deep Bilinear Learning for RGB-D ActionRecognition." In *European Conference on Computer Vision (ECCV), 2018.*

Projects

- **Efficient general object packing via placement proposal network.** (Aug. 2023 - Dec. 2023)
  Role: *Team leader.*
  Establish a placement proposal network to quickly generate potentially optimal placement to speed up the placement search for irregular-shaped supermarket objects.

- **A pick-and-pack system with Franka Emika robot arm.** (Mar. 2023 - Jul. 2023)
  Role: *Team leader.*
  Develop a pick-and-pack system for irregular-shaped supermarket objects via instance segmentation and packing heuristics.

- **Gait Analysis for Stroke Patients.** (Nov. 2017 - Mar. 2018)
  Role: *Team leader.*
  Design a low-level regression model to learn a healthy gait curve region for visualization and stroke gait curve recognition.

Skills

- **Programming Languages**: most experienced with Python; experienced with LaTeX, Matlab, C and C++.

- **Languages**: Cantonese (native), Mandarin (native) and English (fluent).

- **Development Platforms and Softwares**: PyTorch, PyBullet, and TensorFlow.

September 22, 2024