

YUJUN CAI

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◇ Research Scientist in Meta Reality Lab, Redmond, USA.

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EDUCATION

Doctor of Philosophy in Computer Science Nanyang Technological University, Singapore	Aug. 2017 - Dec. 2021
Bachelor of Engineering in Information Technology Southeast University, China, GPA: 4.341/4.8, Rank: 1/229	Aug. 2013 - Jun. 2017
Exchange Program in Information Technology Monash University, Australia	Jan. 2017 - Jun. 2017

RESEARCH INTEREST

I'm interested in **human perception**, vision-language understanding, natural language processing and graph learning.

PROFESSIONAL EMPLOYMENTS

Facebook Reality Lab <i>Full-time Research Scientist</i>	Mar. 2022 - present <i>Redmond, USA</i>
· Explore human perception for Metaverse devices.	
Facebook Reality Lab <i>Research Intern</i>	Aug. 2020 - Dec. 2020 <i>Redmond, USA</i>
· Investigate egocentric pose estimation for AR/VR devices.	
Bytedance AI-Lab <i>Research Intern</i>	Dec. 2019 - Jul. 2020 <i>Mountain View, USA</i>
· Work on pose prediction and motion synthesis for 3D human skeletons.	

AWARDS & HONORS

Won the Third Place in the Million Challenge on 3D Hand Pose Estimation.	Nov. 2017
Interdisciplinary Graduate School Premium Scholarship, NTU.	2017-2021
Meritorious Winner of the Interdisciplinary Contest in Modeling (ICM). (7%)	Apr. 2016
National Scholarship. (Top 2%)	Oct. 2016
Outstanding student in Southeast University. (Top 1%)	Oct. 2015
Texas Instruments Scholarship. (Top 3%)	Apr. 2015
National Scholarship. (Top 2%)	Oct. 2014

RESEARCH PUBLICATION

1. Haoxuan Qu, Zhuoling Li, Hossein Rahmani, Yujun Cai, Jun Liu. DisC-GS: Discontinuity-aware Gaussian Splatting, *NeurIPS 2024*.

2. Yihong Luo, Siya Qiu, Xingjian Tao, Yujun Cai, Jing Tang. Energy-Clibrated VAE with Test Time Free Lunch, *ECCV 2024*.
3. Haoxuan Qu, Yujun Cai, Jun Liu. Llms are good action recognizers, *CVPR 2024*.
4. Li Xu, Haoxuan Qu, Yujun Cai, Jun Liu. 6d-diff: A keypoint diffusion framework for 6d object pose estimation, *CVPR 2024*.
5. Kenrick Kin, Chengde Wan, Ken Koh, Andrei Marin, Necati Cihan Camgoz, Yubo Zhang, Yujun Cai, Fedor Kovalev, Moshe Ben-Zacharia, Shannon Hoople, others. STMG: A Machine Learning Microgesture Recognition System for Supporting Thumb-Based VR/AR Input, *CHI 2024*.
6. Haoxuan Qu, Xiaofei Hui, Yujun Cai, Jun Liu. Lmc: Large model collaboration with cross-assessment for training-free open-set object recognition, *NeurIPS 2023*.
7. Yiwei Wang, Yujun Cai, Muhao Chen, Yuxuan Liang, Bryan Hooi. Primacy effect of chatgpt, *EMNLP 2023*.
8. Julian Tanke, Linguang Zhang, Amy Zhao, Chengcheng Tang, Yujun Cai, Lezi Wang, Po-Chen Wu, Juergen Gall, Cem Keskin. Social diffusion: Long-term multiple human motion anticipation, *ICCV 2023*.
9. Haoxuan Qu, Yujun Cai, Lin Geng Foo, Ajay Kumar, Jun Liu. A Characteristic Function-Based Method for Bottom-Up Human Pose Estimation, *CVPR 2023*.
10. Yiwei Wang, Bryan Hooi, Fei Wang, Yujun Cai, Yuxuan Liang, Wenxuan Zhou, Jing Tang, Manjuan Duan, Muhao Chen. How Fragile is Relation Extraction under Entity Replacements?, *CONLL 2023*.
11. Haoxuan Qu, Li Xu, Yujun Cai, Lin Geng Foo, Jun Liu. Heatmap distribution matching for human pose estimation, *NeurIPS 2022*.
12. Yiwei Wang, Muhao Chen, Wenxuan Zhou, Yujun Cai, Yuxuan Liang, Bryan Hooi. Graphcache: Message passing as caching for sentence-level relation extraction, *ACL 2022*.
13. Yiwei Wang, Muhao Chen, Wenxuan Zhou, Yujun Cai, Yuxuan Liang, Dayiheng Liu, Baosong Yang, Juncheng Liu, Bryan Hooi. Should we rely on entity mentions for relation extraction? debiasing relation extraction with counterfactual analysis, *ACL 2022*.
14. Mingfei Chen, Jianfeng Zhang, Xiangyu Xu, Lijuan Liu, Yujun Cai, Jiashi Feng, Shuicheng Yan. Geometry-guided progressive nerf for generalizable and efficient neural human rendering, *ECCV 2022*.
15. Yiwei Wang, Yujun Cai, Yuxuan Liang, Henghui Ding, Changhu Wang, Bryan Hooi. Time-Aware Neighbor Sampling on Temporal Graphs, *2022 International Joint Conference on Neural Networks (IJCNN) 2022*.
16. Ziyin Xin, Yujun Cai, Louis T Dang, Hannah MS Burke, Jerico Revote, Natalie Charitakis, Denis Bienroth, Hieu T Nim, Yuan-Fang Li, Mirana Ramialison. MonaGO: a novel gene ontology enrichment analysis visualisation system, *BMC bioinformatics 2022*.
17. Chi Zhang, Yujun Cai, Guosheng Lin, Chunhua Shen. Deepemd: Differentiable earth mover's distance for few-shot learning, *CHI 2022*.
18. Shangchen Han, Po-chen Wu, Yubo Zhang, Beibei Liu, Linguang Zhang, Zheng Wang, Weiguang Si, Peizhao Zhang, Yujun Cai, Tomas Hodan, others. UmeTrack: Unified multi-view end-to-end hand tracking for VR, *SIGGRAPH Asia 2022 conference papers 2022*.
19. Yiwei Wang, Yujun Cai, Yuxuan Liang, Henghui Ding, Changhu Wang, Siddharth Bhatia, Bryan Hooi. Adaptive data augmentation on temporal graphs, *NeurIPS 2021*.

20. Jianfeng Zhang, Yujun Cai, Shuicheng Yan, Jiashi Feng, others. Direct multi-view multi-person 3d pose estimation, *NeurIPS 2021*.
21. Yujun Cai, Yiwei Wang, Yiheng Zhu, Tat-Jen Cham, Jianfei Cai, Junsong Yuan, Jun Liu, Chuanxia Zheng, Sijie Yan, Henghui Ding, others. A unified 3d human motion synthesis model via conditional variational auto-encoder, *ICCV 2021*.
22. Yiwei Wang, Wei Wang, Yuxuan Liang, Yujun Cai, Bryan Hooi. Progressive supervision for node classification, *ECML 2021*.
23. Yiwei Wang, Yujun Cai, Yuxuan Liang, Henghui Ding, Changhu Wang, Bryan Hooi. Time-aware neighbor sampling for temporal graph networks, *The 2022 International Joint Conference on Neural Networks (IJCNN) 2021*.
24. Yiwei Wang, Wei Wang, Yuxuan Liang, Yujun Cai, Bryan Hooi. Curgraph: Curriculum learning for graph classification, *WWW 2021*.
25. Yiwei Wang, Wei Wang, Yuxuan Liang, Yujun Cai, Bryan Hooi. Mixup for node and graph classification, *WWW 2021*.
26. Yujun Cai, Lin Huang, Yiwei Wang, Tat-Jen Cham, Jianfei Cai, Junsong Yuan, Jun Liu, Xu Yang, Yiheng Zhu, Xiaohui Shen, others. Learning progressive joint propagation for human motion prediction, *ECCV 2020*.
27. Chi Zhang, Yujun Cai, Guosheng Lin, Chunhua Shen. Deepemd: Few-shot image classification with differentiable earth mover's distance and structured classifiers, *CVPR 2020*.
28. Yiwei Wang, Wei Wang, Yujun Cai, Bryan Hooi, Beng Chin Ooi. Detecting implementation bugs in graph convolutional network based node classifiers, *2020 IEEE 31st International Symposium on Software Reliability Engineering (ISSRE) 2020*.
29. Yujun Cai, Liuhao Ge, Jianfei Cai, Nadia Magnenat Thalmann, Junsong Yuan. 3D hand pose estimation using synthetic data and weakly labeled RGB images, *CHI 2020*.
30. Yiwei Wang, Wei Wang, Yuxuan Liang, Yujun Cai, Juncheng Liu, Bryan Hooi. Nodeaug: Semi-supervised node classification with data augmentation, *KDD 2020*.
31. Yujun Cai, Liuhao Ge, Jun Liu, Jianfei Cai, Tat-Jen Cham, Junsong Yuan, Nadia Magnenat Thalmann. Exploiting spatial-temporal relationships for 3d pose estimation via graph convolutional networks, *ICCV 2019*.
32. Yujun Cai, Liuhao Ge, Jianfei Cai, Junsong Yuan. Weakly-supervised 3d hand pose estimation from monocular rgb images, *ECCV 2018*.
33. Liuhao Ge, Yujun Cai, Junwu Weng, Junsong Yuan. Hand pointnet: 3d hand pose estimation using point sets, *CVPR 2018*.

TECHNICAL SKILLS

Computer Languages	Python, C++, MATLAB.
Software & Tools	Pytorch, Tensorflow, LaTeX.

TEACHING SERVICES

Teaching Assistance	NTU DM6190: Recent Advance on Image Segmentation and Its Applications NTU CZ Engineering Mathematics II NTU CE 7491: Digital Image Processing
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