Xiaoxuan Ma

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Education

Ph.D. Candidate in Computer Science *09 / 2021 – 07 / 2025 (expected)*
School of Computer Science, Peking University
Advisor: Prof. Yizhou Wang

M.S. in Computer Science *09 / 2018 – 07 / 2021*
School of Electronics Engineering and Computer Science, Peking University
Advisor: Prof. Yizhou Wang

B.S. in Computer Science *09 / 2014 – 07 / 2018*
School of Electronics Engineering and Computer Science, Peking University

Research Interest

- Intersection of computer vision, graphics, and machine learning, Human digitization
- CV for science, AI-assisted scientific discovery

Internship Experience

Research Intern *01 / 2022 – 08 / 2022*
Intelligent Multimedia Group, Microsoft Research Asia

- Monocular 3D human mesh estimation
- Monocular absolute 3D human pose estimation

Mentor: Principal Researcher Chunyu Wang

Preprints & Under Review

1. ChimpACT++: Enhancing chimpanzee behavior understanding based on ChimpACT. Under review, 2024.
   Xiaoxuan Ma*, Yutang Lin, Yuan Xu, Stephan P. Kaufhold, Yixin Zhu, Federico Rossano, Yizhou Wang.*
2. VMarker-Pro: Probabilistic 3D Human Mesh Estimation from Virtual Markers. arXiv preprint arXiv:2303.11726v3.
   Xiaoxuan Ma*, Jiajun Su, Yuan Xu, Wentao Zhu, Chunyu Wang, Yizhou Wang.*
3. FreeCloth: Free-form Generation Enhances Challenging Clothed Human Modeling. Under review, 2024.
   Hang Ye†*, ***Xiaoxuan Ma****, Hai Ci, Wentao Zhu, Yizhou Wang*
4. Efficient Action Counting with Dynamic Queries. arXiv preprint arXiv:2403.01543v3.
   *Zishi Li**†*, ***Xiaoxuan Ma*****, Qiuyan Shang*†*, Wentao Zhu, Hai Ci, Yu Qiao, Yizhou Wang*

* equal contribution. † students co-mentored by me.

Journal Publications

1. Human Motion Generation: A Survey. **IEEE TPAMI**, 2024. **(IF=20.8)**
   Wentao Zhu,* ***Xiaoxuan Ma*****, Dongwoo Ro*, Hai Ci, Jinlu Zhang, Jiaxin Shi, Feng Gao, Qi Tian, Yizhou Wang*
2. Locally Connected Network for Monocular 3D Human Pose Estimation. **IEEE TPAMI**, 2022. **(IF=23.6)**
   Hai Ci,* ***Xiaoxuan Ma*****, Chunyu Wang, Yizhou Wang.*

* equal contribution.

Conference Publications

1. Real-time Holistic Robot Pose Estimation with Unknown States. **ECCV**, 2024.
   *Shikun Ban†, Juling Fan†, **Xiaoxuan Ma**, Wentao Zhu, Yu Qiao, Yizhou Wang*
2. ScoreHypo: Probabilistic Human Mesh Estimation with Hypothesis Scoring. **CVPR**, 2024.
   *Yuan Xu†, **Xiaoxuan Ma**, Jiajun Su, Wentao Zhu, Yu Qiao, Yizhou Wang*
3. Scaling Up Dynamic Human-Scene Interaction Modeling. **CVPR**, 2024.
   Nan Jiang, Zhiyuan Zhang*, Hongjie Li, **Xiaoxuan Ma**, Zan Wang, Yixin Chen, Tengyu Liu, Yixin Zhu, Siyuan Huang*
4. ChimpACT: A Longitudinal Dataset for Understanding Chimpanzee Behaviors. **NeurIPS**, 2023.
   Xiaoxuan Ma, Stephan P. Kaufhold*, Jiajun Su*, Wentao Zhu, Jack Terwilliger, Andres Meza, Yixin Zhu, Federico Rossano, Yizhou Wang*
5. Social Motion Prediction with Cognitive Hierarchies. **NeurIPS**, 2023.
   Wentao Zhu, Jason Qin*, Yuke Lou, Hang Ye, **Xiaoxuan Ma**, Hai Ci, Yizhou Wang*
6. Learning Human Motion Representations: A Unified Perspective. **ICCV**, 2023.
   *Wentao Zhu, **Xiaoxuan Ma**, Zhaoyang Liu, Libin Liu, Wayne Wu, Yizhou Wang*
7. 3D Human Mesh Estimation from Virtual Markers. **CVPR**, 2023.
   ***Xiaoxuan Ma**, Jiajun Su, Chunyu Wang, Wentao Zhu, Yizhou Wang.*
8. GFPose: Learning 3D Human Pose Prior with Gradient Fields. **CVPR**, 2023.
   *Hai Ci, Mingdong Wu, Wentao Zhu, **Xiaoxuan Ma**, Hao Dong, Fangwei Zhong, Yizhou Wang.*
9. Virtual Pose: Learning Generalizable 3D Human Pose Models from Virtual Data. **ECCV**, 2022.
   *Jiajun Su, Chunyu Wang, **Xiaoxuan Ma**, Wenjun Zeng, Yizhou Wang.*
10. Context Modeling in 3D Human Pose Estimation: A Unified Perspective. **CVPR**, 2021.
    Xiaoxuan Ma, Jiajun Su*, Chunyu Wang, Hai Ci, Yizhou Wang.*
11. Optimizing Network Structure for 3D Human Pose Estimation. **ICCV**, 2019.
    *Hai Ci, Chunyu Wang, **Xiaoxuan Ma**, Yizhou Wang.*

* equal contribution. † students co-mentored by me.

Selected Awards and Honors

- The Third Prize Scholarship, Peking University *2023*
- Award for Scientific Research, Peking University *2023*
- Award for Scientific Research, Peking University *2022*
- Grand Prize of the 29^{th} Challenge Cup, Peking University *2021*
- Cushman & Wakefield Scholarship, Peking University *2020*
- Outstanding Student, Peking University *2020*
- Outstanding Undergraduate Thesis, Peking University *2018*

Professional Services

Journal Reviewer: IEEE TPAMI, IJCV, IEEE TMM
Conference Reviewer: CVPR, ICCV, ECCV, NeurIPS, ICLR, AAAI

Teaching

- Computational Vision (TA) *2019*
- Machine Learning for Time Series Analysis – Statistical Models and Deep Learning (TA) *2018*
- Computation, Economics and Data Science (TA) *2018*