毛伟, 腾讯 XR Vision Labs, 堪培拉

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主要研究方向

- **Time-series data modeling**, modeling time-series data e.g., human motion, using Transformers, RNNs, Fourier Transforms and GCNs.

- **3D Vision**, including 3D AIGC, 3D reconstruction, neural rendering (NeRF), MVS

- **Generative models**, including VAEs, GANs, NFs, Diffusion models, Autoregressive models.

教育

2018 – 2023 **博士, Australian National University（澳国立），澳大利亚，堪培拉.**
主要方向: *3D Human Understanding*
导师: Dr. Miaomiao Liu.
合作作者：Dr. Mathieu Salzmann from 洛桑联邦理工
毕业论文: Human Motion Prediction: From Deterministic to Stochastic

2016 – 2018 **计算机硕士, Australian National University（澳国立），澳大利亚，堪培拉.**
专业: 人工智能

2009 – 2013 **本科，华东理工大学，中国，上海.**
专业: 信息工程

工作

2024 – now **高级研究员, 腾讯 XR Vision Lab, 澳大利亚，堪培拉.**
工作内容: 3D AIGC for games.
- 基于扩散模型的 3D 基础大模型训练
- 生成 3D 角色的 rigging 和 animation

2022 – 2024 **博后, Australian National University（澳国立），澳大利亚，堪培拉.**
导师: Prof. Richard Hartley, Dr. Miaomiao Liu.
工作内容: 3D Reconstruction using NeRF, Human-scene Interaction.

2013 – 2016 **软件工程师，上海东源计算机自动化工程有限公司**
工作内容：网站开发

论文

在国际顶级期刊和会议上发表了超过 10 篇文章，其中有 5 篇被选为 ORAL/Spotlight（<5%）

期刊

1. **Mao, W.**, Liu, M., Salzmann, M., & Li, H. (2021). Multi-level motion attention for human motion prediction. *International Journal of Computer Vision (IJCV)*.

2. Yang, J., **Mao, W.**, Alvarez, J. M., & Liu, M. (2021). Cost volume pyramid based depth inference for multi-view stereo. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*.

会议

1. **Mao, W.**, Hartley, R., Mathieu, S., & Liu, M. (2024). *Neural sdf flow for 3d reconstruction of dynamic scenes*. The International Conference on Learning Representations (ICLR).

2. Wang, R., **Mao, W.**, Lu, C., & Li, H. (2024). *Towards high-quality 3d motion transfer with realistic apparel animation*. European Conference on Computer Vision (ECCV).

3. Xing, C., **Mao, W.**, & Liu, M. (2024). *Scene-aware human motion forecasting via mutual distance prediction*. European Conference on Computer Vision (ECCV).

4. Gao, H., **Mao, W.**, & Liu, M. (2023). *Visfusion: Visibility-aware online 3d scene reconstruction from videos*. Conference on Computer Vision; Pattern Recognition (CVPR).

5. Wang, R., **Mao, W.**, & Li, H. (2023a). *Deepsimho: Stable pose estimation for hand-object interaction via physics simulation*. Neural Information Processing Systems (NeurIPS).

6. Wang, R., **Mao, W.**, & Li, H. (2023b). *Interacting hand-object pose estimation via dense mutual attention*. Winter Conference on Applications of Computer Vision (WACV).

7. **Mao, W.**, Liu, M., Hartley, R., & Salzmann, M. (2022). *Contact-aware human motion forecasting*. Advances in Neural Information Processing Systems (NeurIPS) Spotlight.

8. **Mao, W.**, Liu, M., & Salzmann, M. (2022). *Weakly-supervised action transition learning for stochastic human motion prediction*. Conference on Computer Vision; Pattern Recognition (CVPR) ORAL.

9. **Mao, W.**, Liu, M., & Salzmann, M. (2021). *Generating smooth pose sequences for diverse human motion prediction*. International Conference on Computer Vision (ICCV) ORAL.

10. **Mao, W.**, Liu, M., & Salzmann, M. (2020). *History repeats itself: Human motion prediction via motion attention*. European Conference on Computer Vision (ECCV).

11. Yang, J., **Mao, W.**, Alvarez, J. M., & Liu, M. (2020). *Cost volume pyramid based depth inference for multi-view stereo*. Conference on Computer Vision; Pattern Recognition (CVPR) ORAL.

12. **Mao, W.**, Liu, M., Salzmann, M., & Li, H. (2019). *Learning trajectory dependencies for human motion prediction*. International Conference on Computer Vision (ICCV) ORAL.

教学

授课　🔖 Advanced Computer Vision (ENGN8501), ANU. (2022, 2023)

助教　🔖 Artificial Intelligence (COMP3620), ANU. (2018, 2021);
　　　　Computer Vision (ENGN6528), ANU. (2019, 2021);
　　　　Relational Database (COMP6240), ANU. (2017, 2018)

学术活动

审稿人　🔖 **CVPR:** 2021,2022,2023,2024,2025; **ICCV:** 2021,2023; **IJCAI:** 2022,2023; **ICML:** 2022,2023; **NeurIPS:** 2021,2022; **RAL:** 2021,2022,2023; **ICLR:** 2024.

荣誉

🔖 **NeurIPS22 Top Reviewer, CVPR22 Outstanding Reviewer, ICCV19 Travel Award**

授课　🔖 Advanced Computer Vision (ENGN8501), ANU. (2022, 2023)

助教　🔖 Artificial Intelligence (COMP3620), ANU. (2018, 2021);
　　　　Computer Vision (ENGN6528), ANU. (2019, 2021);
　　　　Relational Database (COMP6240), ANU. (2017, 2018)