Juncheng Liu, Ph.D.

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Research Interests

Computer Vision, 3D Graphics, Machine Learning and Robotics.

Employment History

2022 – Current **Lecturer** Department of Computer Science, University of Otago, Dunedin, New Zealand.
Teaching assignments:
COSC203 Web, Database and Network
AIML401 Programming for Artificial Intelligence

2019 – 2022 **Postdoctoral Fellow** Department of Computer Science, University of Otago, Dunedin, New Zealand.
The Science for Technological Innovation National Science Challenge (SfTI): Robotics Spearhead Project
My focus: 3D perception and reinforcement learning

Education

2013 – 2019 **Ph.D., Peking University, Beijing, China** .
Thesis title: *Data-driven 3D Shape Analysis and Modeling.*
Supervised by Zhouhui Lian

2017 – 2018 **Visiting Scholar, Cardiff University, Cardiff, UK** .
Supervised by Prof. Paul L. Rosin

2009 – 2013 **B.Sc. Software Engineering, Dalian University of Technology, Dalian, China**.

Research Publications

Journal Articles

1. Liu, J., Mills, S., & McCane, B. (n.d.). Learning to explore by reinforcement over high-level options. *CoRR*.

2 Liu, J., Lian, Z., & Xiao, J. (2020). Sketch based modeling and editing via shape space exploration. *Multim. Tools Appl.*, *79*(25-26), 18121–18142. doi:10.1007/s11042-020-08677-0

3 Bonnici, A., Akman, A., Calleja, G., Camilleri, K. P., Fehling, P., Ferreira, A., … Liu, J. et al. (2019). Sketch-based interaction and modeling: Where do we stand? *AI EDAM*, *33*(4), 370–388.

4 Liu, J., Rosin, P. L., Sun, X., Xiao, J., & Lian, Z. (2019). Image-driven unsupervised 3d model co-segmentation. *The Visual Computer*, *35*(6), 909–920.

5 Pickup, D., Liu, J., Sun, X., Rosin, P. L., Martin, R. R., Cheng, Z., … Shamai, G. et al. (2018). An evaluation of canonical forms for non-rigid 3d shape retrieval. *Graphical Models*, *97*, 17–29.

6 Wang, Y., Liu, J., Fan, X., He, X., Jia, Q., & Gao, R. (2015). Online gesture-based interaction with visual oriental characters based on manifold learning. *Signal Processing*, *110*, 123–131.

7 Wang, Y., Luo, Z., Liu, J., Fan, X., Li, H., & Wu, Y. (2014). Real-time estimation of hand gestures based on manifold learning from monocular videos. *Multimedia tools and applications*, *71*(2), 555–574.

Conference Proceedings

1 Liu, J., Mills, S., & McCane, B. (2020a). Rocnet: Recursive octree network for efficient 3d deep representation. In *2020 international conference on 3d vision (3dv)* (pp. 414–422). IEEE.

2 Liu, J., Mills, S., & McCane, B. (2020b). Variational autoencoder for 3d voxel compression. In *2020 35th international conference on image and vision computing new zealand (ivcnz)* (pp. 1–6). IEEE.

3 Liu, J., Lian, Z., Wang, Y., & Xiao, J. (2017). Incremental kernel null space discriminant analysis for novelty detection. In *Proceedings of the ieee conference on computer vision and pattern recognition* (pp. 792–800).

4 Liu, J., Lian, Z., & Xiao, J. (2017a). 3d mesh unfolding via semidefinite programming. In *3dor@ eurographics*.

5 Liu, J., Lian, Z., & Xiao, J. (2017b). Auto-colorization of 3d models from images. In *Siggraph asia 2017 technical briefs* (pp. 1–4).

6 Liu, J., Lian, Z., Feng, J., & Zhou, B. (2015). Sketch based modeling via manifold regularization. In *Siggraph asia 2015 technical briefs* (pp. 1–4).

Skills

Languages — Full professional proficiency in English, Native proficiency in Mandarin Chinese

Coding — C/C++, Matlab, Python, ROS, LaTeX, Pytorch, OpenGL, OpenCV, Javascript, HTML/CSS

Academic Activities

- Reviewer for TOG, TPAMI, TKDE, SIGGRAPH Asia 2019, ICCV2021, AAAI2021, CVPR2022, ECCV2022, 3DV 2022
- Outstanding Reviewer Award for ICCV 2021

References

Available on Request