Huan Fu

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D.O.B: 1991-10-22

Google Scholar: https://scholar.google.com/citations?hl=en&user=EYTzVMwAAAAJ

Homepage: https://hufu6371.github.io/huanfu/

Research Interests: 3D Vision, Neural Radiance Fields, Dense Prediction (such as semantic segmentation and depth prediction), Image Synthesis.

Education

The University of Sydney （USYD） 03/2017 – 04/2019

Ph.D. Degree

Thesis: Robust Dense Prediction for Visual Perception

Supervisor: Prof. Dacheng Tao

Co-supervisor: Prof. Chaohui Wang & Prof. Mingming Gong

Scholarship： USYD Postgraduate Research Scholarship

University of Technology Sydney （UTS） 09/2014 – 03/2017

Ph.D. Student （Transfer to USYD in 2017）

Supervisor: Prof. Dacheng Tao

Co-supervisor: Prof. Chaohui Wang & Prof. Mingming Gong

Scholarship： UTS International Research Scholarship

QCIS HDR Scholarship

University of Science and Technology of China （USTC） 08/2010 – 07/2014

B.Sc. in Computer Science

A member of the Computer Science and Technology Elite/Excellent Class

Publications

➢ 2023 (Pre-print)

[1] Li, Yujie, Bowen Cai, Yuqin Liang, Rongfei Jia, Binqiang Zhao, Mingming Gong, and Huan Fu. "3D Scene Creation and Rendering via Rough Meshes: A Lighting Transfer Avenue." *arXiv preprint arXiv:2211.14823* (2022). (Under Review (Major Revision) in TPAMI) (Corresponding Author) **ERA Ranking A***

[2] Jiana Yang, Youjian Zhang, Bowen Cai, Rongfei Jia, Zhe Cheng, Mingming Gong, and Huan Fu. "Learning Local Arrangements from Pseudo Anchors for 3D Scene Generation". (Corresponding Author)

➢ 2023

[3] Dongting Hu, Zhenkai Zhang, Tingbo Hou, Tongliang Liu, Huan Fu, Mingming Gong. "Multiscale Representation for Real-Time Anti-Aliasing Neural Rendering", In ICCV 2023. (Equal Corresponding Author) **CORE Ranking A***

[4] Bowen Cai, Jinchi Huang, Rongfei Jia, Chengfei Lv, and Huan Fu. "NeuDA: Neural Deformable Anchor for High-Fidelity Implicit Surface Reconstruction." In **CVPR** 2023 (Corresponding Author) **CORE Ranking A***

- **2022**

[5] Zhang, Jian, Jinchi Huang, Bowen Cai, Huan Fu, Mingming Gong, Chaohui Wang, Jiaming Wang et al. "Digging into Radiance Grid for Real-Time View Synthesis with Detail Preservation." In *European Conference on Computer Vision (**ECCV**)*, pp. 724-740. Springer, Cham, 2022. (Corresponding Author) **CORE Ranking A***

[6] Zhang, Jian, Yuanqing Zhang, Huan Fu, Xiaowei Zhou, Bowen Cai, Jinchi Huang, Rongfei Jia, Binqiang Zhao, and Xing Tang. "Ray Priors through Reprojection: Improving Neural Radiance Fields for Novel View Extrapolation." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 18376-18386. 2022. (Corresponding Author) **CORE Ranking A***

[7] Zhang, Yuanqing, Jiaming Sun, Xingyi He, Huan Fu, Rongfei Jia, and Xiaowei Zhou. "Modeling Indirect Illumination for Inverse Rendering." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 18643-18652. 2022. **CORE Ranking A***

[8] Guo, Jiaxian, Jiachen Li, Huan Fu, Mingming Gong, Kun Zhang, and Dacheng Tao. "Alleviating Semantics Distortion in Unsupervised Low-Level Image-to-Image Translation via Structure Consistency Constraint." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 18249-18259. 2022. **CORE Ranking A***

- **2021**

[9] Fu, Huan, Rongfei Jia, Lin Gao, Mingming Gong, Binqiang Zhao, Steve Maybank, and Dacheng Tao. "3d-future: 3d furniture shape with texture." *International Journal of Computer Vision (**IJCV**)* 129, no. 12 (2021): 3313-3337. **ERA Ranking A***

[10] Fu, Huan, Bowen Cai, Lin Gao, Ling-Xiao Zhang, Jiaming Wang, Cao Li, Qixun Zeng et al. "3d-front: 3d furnished rooms with layouts and semantics." In *Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**)*, pp. 10933-10942. 2021. **CORE Ranking A***

[11] Cai, Bowen, Huan Fu, Rongfei Jia, Binqiang Zhao, Hua Li, and Yinghui Xu. "Exploiting Diverse Characteristics and Adversarial Ambivalence for Domain Adaptive Segmentation."

In *Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI**)*, vol. 35, no. 8, pp. 6850-6858. 2021. (Corresponding Author) **CORE Ranking A***

[12] Chaohui Wang*, Huan Fu*, Dacheng Tao, and Michael J. Black. "Occlusion boundary: A formal definition & its detection via deep exploration of context." *IEEE Transactions on Pattern Analysis and Machine Intelligence (**T-PAMI**)* 44, no. 5 (2020): 2641-2656. (**Equal Contribution**) **ERA Ranking A***

[13] Zhao, Shanshan, Mingming Gong, Huan Fu, and Dacheng Tao. "Adaptive context-aware multi-modal network for depth completion." *IEEE Transactions on Image Processing (**T-IP**)* 30 (2021): 5264-5276. **ERA Ranking A***

- **2020**

[14] Fu, Huan*, Shunming Li*, Rongfei Jia, Mingming Gong, Binqiang Zhao, and Dacheng Tao. "Hard Example Generation by Texture Synthesis for Cross-domain Shape Similarity Learning." *Advances in Neural Information Processing Systems (**NeurIPS**)* 33 (2020). **CORE Ranking A***

[15] Zhao, Shanshan, Mingming Gong, Tongliang Liu, Huan Fu, and Dacheng Tao. "Domain generalization via entropy regularization." *Advances in Neural Information Processing Systems (**NeurIPS**)* 33 (2020). **CORE Ranking A***

- **Before 2019**

[16] Zhao, Shanshan, Huan Fu, Mingming Gong, and Dacheng Tao. "Geometry-aware symmetric domain adaptation for monocular depth estimation." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 9788-9798. 2019. **CORE Ranking A***

[17] Fu, Huan*, Mingming Gong*, Chaohui Wang, Kayhan Batmanghelich, Kun Zhang, and Dacheng Tao. "Geometry-consistent generative adversarial networks for one-sided unsupervised domain mapping." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 2427-2436. 2019. **CORE Ranking A***

[18] Xu, Yanwu, Mingming Gong, Huan Fu, Dacheng Tao, Kun Zhang, and Kayhan Batmanghelich. "Multi-scale masked 3-D U-net for brain tumor segmentation." In *International MICCAI Brainlesion Workshop*, pp. 222-233. Springer, Cham, 2018.

[19] Fu, Huan, Mingming Gong, Chaohui Wang, Kayhan Batmanghelich, and Dacheng Tao. "Deep ordinal regression network for monocular depth estimation." In *Proceedings of the IEEE conference on computer vision and pattern recognition (**CVPR**)*, pp. 2002-2011. 2018. **CORE Ranking A***

[20] Fu, Huan, Mingming Gong, Chaohui Wang, and Dacheng Tao. "MoE-SPNet: A mixture-of-experts scene parsing network." *Pattern Recognition (**PR**)* 84 (2018): 226-236. **ERA Ranking A***

[21] Ma, Kede, Huan Fu, Tongliang Liu, Zhou Wang, and Dacheng Tao. "Deep blur mapping: Exploiting high-level semantics by deep neural networks." *IEEE Transactions on Image Processing (**T-IP**)* 27, no. 10 (2018): 5155-5166. **ERA Ranking A***

[22] Fu, Huan, Chaohui Wang, Dacheng Tao, and Michael J. Black. "Occlusion boundary detection via deep exploration of context." In *Proceedings of the IEEE conference on computer vision and pattern recognition (**CVPR**)*, pp. 241-250. 2016. **CORE Ranking A***

[23] He, Shan, Shangfei Wang, Wuwei Lan, Huan Fu, and Qiang Ji. "Facial expression recognition using deep Boltzmann machine from thermal infrared images." In *2013 Humaine Association Conference on Affective Computing and Intelligent Interaction*, pp. 239-244. IEEE, 2013.

Industrial Experience

- **Futurise (AGI startup)**

  Principle Researcher 07/2023 – present

- **Taobao, Alibaba Group, Beijing, CN**

  Staff Algorithm Expert (P8) 04/2022 – 06/2023

  Senior Algorithm Expert (P7, Ali Star) 05/2019 – 03/2022

- **Microsoft Asia-Pacific Research & Development Group (ARD), CN**

  Software Development Engineer Intern 07/2013 – 10/2013

Awards

- 3D-FRONT (ICCV21) won the CCF ChinaGraph Best Dataset Award
- GcGAN has been selected as Best Paper Finalist in CVPR19
- DORN (CVPR18) won the First Prize of MDE in Robust Vision Challenge Workshop CVPR18.
- USYD Postgraduate Research Scholarship
- UTS International Research Scholarship
- QCIS HDR Scholarship
- First Prize in National High School Mathematics Competition

Academic Events

- Co-organize the ICCV 2023 Workshop "3D Vision and Modeling in Challenges eCommerce". 2023
- Co-organize the <<Frontiers in Computer Science>> Special Issue "Deep Learning with

Few Labeled Training Data in Computer Vision and Image Analysis" (Topic Editor) 2022

- Co-organize the IJCAI 2021 Workshop "3D AI Challenge through 3D-FUTURE Benchmark" 2021

Academic Services

- **Conference SPC member (CORE Ranking A*)**
  IJCAI24, IJCAI23, IJCAI21

- **Conference PC member (CORE Ranking A*)**
  CVPR24, ICML24
  CVPR23, ICCV23, ICML23, NeurIPS23, ICLR23, SIGGRAPH Asia23
  CVPR22, ECCV22, NeurIPS22, 3DV22, ICML22, AAAI22, IJCAI22
  CVPR21, ICCV21, ICML21, NeurIPS21, AAAI21,
  CVPR20, NeurIPS20, AAAI20, IJCAI20

- **Journal Reviewer (ERA Ranking A*)**
  IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)
  IEEE Transactions on Neural Networks and Learning Systems (T-NNLS)
  IEEE Transactions on Image Processing (T-IP)
  Pattern Recognition (PR)
  International Journal of Computer Vision (IJCV)