Dong Du

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Research Interests

Sketch-based Modeling, 3D/4D Reconstruction, 3D Shape/Scene Analysis, Image Processing

Education

2014–2021 **Ph.D. in Computational Mathematics**, *University of Science and Technology of China*, China. Supervisor: Prof. Ligang Liu, Advisors: Prof. Xiaoguang Han, Prof. Hongbo Fu.

2010–2014 **B.Sc. in Applied Mathematics**, *Nanjing University of Science and Technology*, China. Advisor: Prof. Ligang Liu.

Research Experience

2023–2024 **Postdoctoral Fellow**, *City University of Hong Kong*, Supervisor: Prof. Junhui Hou.

2021–2023 **Research Fellow**, *The Chinese University of Hong Kong, Shenzhen*, Supervisor: Prof. Xiaoguang Han.

2018–2021 **Research Associate**, *The Chinese University of Hong Kong, Shenzhen*, Supervisor: Prof. Xiaoguang Han.

2017–2018 **Research Associate**, *City University of Hong Kong*, Supervisor: Prof. Hongbo Fu.

Publications (* equal contribution, # corresponding author)

TVCG 2023 Zhongjin Luo, **Dong Du**, Heming Zhu, Yizhou Yu, Hongbo Fu, Xiaoguang Han#. **SketchMetaFace: A Learning-based Sketching Interface for High-fidelity 3D Character Face Modeling**. IEEE Transactions on Visualization and Computer Graphics, 2023 (CCF A).

SGP 2023 Xiangyu Zhu*, **Dong Du***, Haibin Huang, Chongyang Ma, Xiaoguang Han#. **3D Keypoint Estimation Using Implicit Representation Learning**. The Symposium on Geometry Processing, 2023 (CCF B).

CVPR 2023 Xiangyu Zhu*, **Dong Du***, Weikai Chen, Zhiyou Zhao, Yinyu Nie, Xiaoguang Han#. **NerVE: Neural Volumetric Edges for Parametric Curve Extraction from Point Cloud**. IEEE Conference on Computer Vision and Pattern Recognition, 2023 (CCF A).

UIST 2021 Zhongjin Luo, Jie Zhou, Heming Zhu, **Dong Du**, Xiaoguang Han#, Hongbo Fu. **SimpModeling: Sketching Implicit Field to Guide Mesh Modeling for 3D Animalmorphic Head Design**. The 34th Annual ACM Symposium on User Interface Software and Technology, 2021 (CCF A).

TVCG 2020 **Dong Du**, Xiaoguang Han#, Hongbo Fu, Feiyang Wu, Yizhou Yu, Shuguang Cui, and Ligang Liu. **SAniHead: Sketching Animal-like 3D Character Heads Using a View-surface Collaborative Mesh Generative Network**. IEEE Transactions on Visualization and Computer Graphics, 2020 (CCF A).

CGF 2020 **Dong Du**, Heming Zhu, Yinyu Nie, Xiaoguang Han#, Shuguang Cui, Yizhou Yu, Ligang Liu. **Learning Part Generation and Assembly for Sketching Man-made Objects**. Computer Graphics Forum, 2020 (CCF B).

3DV 2020	**Dong Du**, Zhiyi Zhang, Xiaoguang Han[#], Shuguang Cui, Ligang Liu. **VIPNet: A Fast and Accurate Single-View Volumetric Reconstruction by Learning Sparse Implicit Point Guidance**. International Conference on 3D Vision, 2020 (CCF C).
ECCV 2020	Heming Zhu, Yu Cao, Hang Jin, Weikai Chen, **Dong Du**, Zhangye Wang, Shuguang Cui, Xiaoguang Han[#]. **Deep Fashion3D: A Dataset and Benchmark for 3D Garment Reconstruction from Single Images**. European Conference on Computer Vision, 2020 (Oral, CCF B).
CVPR 2020	Yiqun Lin, Zizheng Yan, Haibin Huang, **Dong Du**, Ligang Liu, Shuguang Cui, Xiaoguang Han[#]. **FPConv: Learning Local Flattening for Point Convolution**. IEEE Conference on Computer Vision and Pattern Recognition, 2020 (CCF A).
CVPR 2019	Xiaoguang Han[#], Zhaoxuan Zhang, **Dong Du**, Mingdai Yang, Jingming Yu, Pan Pan, Xin Yang, Ligang Liu, Zixiang Xiong, Shuguang Cui. **Deep Reinforcement Learning of Volume-Guided Progressive View Inpainting for 3D Point Scene Completion from a Single Depth Image**. IEEE Conference on Computer Vision and Pattern Recognition, 2019 (Oral, CCF A).
TVCG 2018	Xiaoguang Han[#], Kangcheng Hou, **Dong Du**, Yuda Qiu, Shuguang Cui, Kun Zhou, Yizhou Yu. **CaricatureShop: Personalized and Photorealistic Caricature Sketching**. IEEE Transactions on Visualization and Computer Graphics, 2018 (CCF A).
i3D 2018	Wanchao Su, **Dong Du**, Xin Yang, Shizhe Zhou, Hongbo Fu[#]. **Interactive Sketch-Based Normal Map Generation with Deep Neural Networks**. ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games, 2018 (CCF B).
JUSTC 2017	**Dong Du**, Shiwei Wang, Ligang Liu[#]. **The Research and Development of Dynamic Creatures Design Based on Mechanics**. Journal of University of Science and Technology of China, 2017.

Selected Projects

2022	**PIFu for the Real World: A Self-supervised Framework to Reconstruct Dressed Human from Single-view Images**, *Submitted to TIP*.
	○ An end-to-end self-supervised network using depth-guided volume-/surface-aware SDF learning to improve the generalization of PIFu(HD) by utilizing abundant and diverse in-the-wild images.
2020	**Portrait-IDE: Implicit-guided accurate single-view Depth Estimation for human portraits**.
	○ A learning-based method is proposed to integrate implicit shape learning into the depth generation on image space, and achieves high-fidelity and efficient single-view depth estimation for human portraits.
2017	**Sketch2Model: Volumetric Modeling and Segmentation with Single View Sketching**.
	○ A local-to-global/coarse-to-fine solution is proposed for inferring 3D volumetric shapes from single-view sketch input by learning part generation and part assembly simultaneously.

Academic Services

2020-2023	Journal Reviewer of TMC, C&G, TVCJ.
	Conference Reviewer of SIGGRAPH Asia, CVPR, ECCV, IJCAI, BMVC, VR, 3DV.

Skills

Language	Chinese, English.
Coding	Familiar with C++, Python.
Framework	Familiar with deep learning frameworks, such as PyTorch, TensorFlow, and Caffe.

References

Ligang Liu	Full Professor at University of Science and Technology of China, my Ph.D. supervisor. Email: lgliu@ustc.edu.cn

Hongbo Fu	Full Professor at City University of Hong Kong, my academic advisor in 2017-2018. Email: hongbofu@cityu.edu.hk
Xiaoguang Han	Assistant Professor at the Chinese University of Hong Kong, Shenzhen, my academic advisor in 2018-2023. Email: hanxiaoguang@cuhk.edu.cn
Junhui Hou	Associate Professor at City University of Hong Kong, my postdoc advisor in 2023-2024. Email: jh.hou@cityu.edu.hk