Dong Du

2001 Longxiang Blvd.
Longgang District, Shenzhen, Guangdong
China
+86 17875509316
dongdu@mail.ustc.edu.cn

Research Interests

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

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

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

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.

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.

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.

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.

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.

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).

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.

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).

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.

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.

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 **SketchMetaFace: A Learning-based Sketching Interface for Free-style and High-fidelity 3D Character Face Modeling**, *Submitted to TVCG 2022*.

- An easy-to-use sketching system designed for amateur users to create free-style and high-fidelity 3D character faces in minutes using 2D curvature-aware strokes.

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.

2022 **3D Keypoint Estimation using Implicit Represention Learning**, *Submitted to TVCG*.

- An implicit representation for unfixed 3D keypoint estimation of general objects with various topology and geometry, which is robust to diverse inputs, e.g., complete/partial point clouds, single-view 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 C&G, TVCJ.

Conference Reviewer of 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