

# JIAPENG TANG

No.381 Wushan Road, Tianhe District, Guangzhou, P.R.China  
(+86)13246818872  $\diamond$  tangjiapengtjp@gmail.com

## EDUCATION

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**South China University of Technology**

Bachelor of Engineering, Information Engineering (Elite Class)

*Sept. 2014 - June. 2018*

GPA: 3.84/4 Ranking: 6/61

**South China University of Technology**

Master of Signal and Information Processing

*Sept. 2018 - June. 2021 (Expected)*

GPA: 86.57/100

**The Hong Kong University of Science and Technology**

PhD in Computer Science and Engineering

*Sept. 2021*

## RESEARCH INTERESTS

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3D Model Acquisition: 3D Object reconstruction and completion, 3D/4D Human body recovery, Neural radiance field.

Scene Understanding and Reconstruction: Depth estimation, Multi view stereo, SLAM, 3D scene detection and semantic segmentation.

## PUBLICATIONS

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**J. Tang**, X. Han, J. Pan K. Jia and X. Tong. A Skeleton-bridged Deep Learning Approach for Generating Meshes of Complex Topologies from Single RGB Images. The IEEE Conference on Computer Vision and Pattern Recognition, (**CVPR**), 2019, **Oral presentation, Best paper final lists, %0.8**

J. Pan, X. Han, W. Chen, **J. Tang** and K. Jia. Deep Mesh Reconstruction from Single RGB Images via Topology Modification Networks, (**ICCV**), 2019.

**J. Tang**, X. Han, M. Tan, X. Tong and K. Jia. SkeletonNet: A Topology-Preserving Solution for Learning Mesh Reconstruction of Object Surfaces from RGB Images, IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2021.

**J. Tang**, D. Xu, K. Jia, and L. Zhang. Learning Parallel Dense Correspondence from Spatio-Temporal Descriptors for Efficient and Robust 4D Reconstruction, (**CVPR**), 2021.

**J. Tang**, J. Lei, D. Xu, F. Ma, K. Jia, and L. Zhang. Sign-Agnostic CONet: Learning Implicit Surface Reconstructions by Sign-Agnostic Optimization of Convolutional Occupancy Networks, **Arxiv**, 2021.

## EXPERIENCE

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**The Chinese University of Hong Kong, Shenzhen**

Summer Research Intern, Supervised by **Prof. Xiaoguang Han**

Focus on the topology-aware object mesh generation.

*July. 2018 - Sep. 2018*

- Introduced skeleton to represent topology, and used VCGLib to process ShapeNet-Skeleton dataset.
- Proposed a skeleton-bridged deep learning approach to generate meshes with complex topologies, took the respective advantages of point cloud, voxel, and mesh representation, and achieved state-of-the-art performance both quantitatively and qualitatively.

- Designed a novel decoder to regress accurate skeletal points from images according to the observation of the composition principle of skeletal point sets.
- Designed a strategy of global-guided subvolume synthesis to refine rough skeletons by 3D CNN.
- Designed a image-guided Graph-CNN to deform coarse meshes for geometric details compensation.

### **South China University of Technology**

*Nov. 2017 - Present*

Research Assistant & Master Student, Supervised by **Prof. Kui Jia**

Focus on 3D object reconstruction from RGB images or point clouds, and 3D shape completion.

- Delved into geometric modeling through different shape representations, proficient in using the common geometry processing techniques and tools.
- Designed a differential point-to-voxel layer to connect the modules of skeletal points generation and volume refinement into an end-to-end, trainable system, termed as SkeletonNet, enabling more accurate skeleton inference.
- Designed a skeleton-aware feature extraction module to regularize the learning of implicit field, and the proposed implicit mesh generation approach was more superior to existing ones owing to taking explicit structure guidance into consideration.

### **DAMO Academy, Alibaba Group**

*Jun. 2020 - Present*

Research Intern, Supervised by **Prof. Lei Zhang**

Focus on the 3D/4D human body reconstruction.

- Analyzed the merits and shortcomings of existing 3D/4D human body recovery methods based on different shape representations.
- Designed a novel framework for learning robust spatio-temporal shape representations from 4D point clouds, and developed an efficient mechanism for capturing shape dynamics

## **AWARDS**

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South China University of Technology Scholarship

*2015-2017*

Merit Student of South China University of Technology

*2016-2017*

## **SKILLS AND INTERESTS**

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Language: Native in Chinese (Mandarin), Fluent in English (IELTS 6.5)

Programming Language: Python, C++/Cuda, Matlab, LaTeX

Deep Learning Platform: PyTorch, TensorFlow

Sports: Basketball, Badminton, Table tennis, and Swimming.

## **OTHERS**

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For more information, please visit my website at: <https://tangjiapeng.github.io>.