Jiahui Huang

huang-jh18@mails.tsinghua.edu.cn

(+86) 184-0165-3326

https://cg.cs.tsinghua.edu.cn/people/~huangjh/

Education

Ph.D Candidate, Computer Science, Tsinghua University *09/2018 - 06/2023 (Expected)*
- Graphics and Geometry Computing Group.   Advisor: Prof. Shi-Min Hu
- Research Focus: 3D Computer Vision, SLAM and Graphics.

Visiting Scholar, Computer Science, Stanford University *02/2020 - 08/2020*
- Advisor: Leonidas J. Guibas
- Research Focus: Dynamic Point Clouds Processing and Understanding.

B.S., Computer Science, Tsinghua University *08/2014 - 06/2018*
- Overall GPA: **93**/100   Rank: 3/151

Skills

Language: English (TOEFL iBT: **108** with R30, L28, S27, W23) and Mandarin Chinese (native)

Programming: Python, C++ and CUDA.   ***Libraries:*** PyTorch, OpenCV, OpenGL.

Selected Publications

Multiway Non-rigid Point Cloud Registration via Learned Functional Map Synchronization *T-PAMI 2022* ↗

Jiahui Huang, Tolga Birdal, Zan Gojcic, Leonidas J. Guibas, Shi-Min Hu.

MultiBodySync: Multi-Body Segmentation and Motion Estimation via 3D Scan Synchronization *CVPR 2021 Oral* ↗

Jiahui Huang, He Wang, Tolga Birdal, Minhyuk Sung, Federica Arrigoni, Shi-Min Hu, Leonidas J. Guibas.

DI-Fusion: Online Implicit 3D Reconstruction with Deep Priors *CVPR 2021* ↗

Jiahui Huang, Shi-Sheng Huang, Haoxuan Song, Shi-Min Hu.

ClusterVO: Clustering Moving Instances and Estimating Visual Odometry for Self and Surroundings *CVPR 2020* ↗

Jiahui Huang, Sheng Yang, Tai-Jiang Mu, and Shi-Min Hu.

WallNet: Reconstructing General Room Layouts from RGB Images *GMOD 2020* ↗

Jiahui Huang, Zhengfei Kuang, Fanglue Zhang, and Shi-Min Hu.

ClusterSLAM: A SLAM Backend for Simultaneous Rigid Body Clustering and Motion Estimation *ICCV 2019* ↗

Jiahui Huang, Sheng Yang, Zishuo Zhao, Yu-Kun Lai, and Shi-Min Hu.

Work Experience

Research Engineer Intern, Meituan *07/2021 - 08/2021*
- Vision Intelligence Center - 3D Mapping Team.   Leader: Dr. Zhuoliang Kang
- Deep-learning-based 3D road reconstruction from monocular videos for AV mapping.

Projects

3-Sweep: A Creative Method for 3D Modeling from a Single Image *02/2018* ↗

Implementation of the 3-Sweep modeling method using Qt and OpenGL.

Bachelor Thesis: Semantic Indoor Scene Modeling with Vision Pipeline *05/2018* ↗

Designed a system capable of recovering 3D indoor layouts and furniture from a single image.

Academic Services

Reviewer, CVPR, ECCV, RA-L, Graphics Modeling	*2022*
Reviewer, ICCV, T-PAMI, NeurIPS, The Visual Computer, IEEE TCSVT	*2021*
Reviewer, Computer & Graphics, Computational Visual Media	*2020*
Teaching Assistant, Fundamentals of Computer Graphics, Tsinghua University	*02/2019 - 06/2019*
Teaching Assistant, Advanced Computer Graphics, Tsinghua University	*09/2019 - 01/2020*

Other Publications

CIRCLE: Convolutional Implicit Reconstruction and Completion for Large-scale Indoor Scene *Preprint* ⬀

Haoxiang Chen, Jiahui Huang, Tai-Jiang Mu, Shi-Min Hu.

Real-Time Globally Consistent 3D Reconstruction with Semantic Priors *TVCG 2021* ⬀

Shi-Sheng Huang, Haoxiang Chen, Jiahui Huang, Hongbo Fu, Shi-Min Hu.

Subdivision-Based Mesh Convolution Networks *TOG 2021* ⬀

Shi-Min Hu, Zheng-Ning Liu, Meng-Hao Guo, Jun-Xiong Cai, Jiahui Huang, Tai-Jiang Mu, Ralph R. Martin.

HDR-Net-Fusion: Real-time 3D Dynamic Scene Reconstruction with a Hierarchical Deep Reinforcement Network *CVMJ 2021* ⬀

Haoxuan Song, Jiahui Huang, Yan-Pei Cao, Tai-Jiang Mu.

Shallow2Deep: Indoor Scene Modeling by Single Image Understanding *PR 2020* ⬀

Yinyu Nie, Shihui Guo, Jian Chang, Xiaoguang Han, Jiahui Huang, Shi-Min Hu, Jian Jun Zhang.

Interactive Modeling of Lofted Shapes from a Single Image *CVMJ 2019* ⬀

Congyue Deng, Jiahui Huang, Yong-Liang Yang.

DeepPrimitive: Image decomposition by layered primitive detection *CVMJ 2018* ⬀

Jiahui Huang, Jun Gao, Vignesh Ganapathi-Subramanian, Hao Su, Yin Liu, Chengcheng Tang, Leonidas J. Guibas.

Controllable Dendritic Crystal Simulation Using Orientation Field *EuroGraphics 2018* ⬀

Bo Ren, Jiahui Huang, Ming C. Lin, Shi-Min Hu.