

WENBO HU

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EDUCATION

The Chinese University of Hong Kong

Department of Computer Science and Engineering

Ph.D. Student

August 2018 - Present

Supervised by **Tien-Tsin Wong**

Dalian University of Technology

Department of Computer Science and Technology

Bachelor of Engineering.

September 2014 - June 2018

Rank: 3/105, GPA:90.1/100

RESEARCH INTERESTS

My general research interests are computer graphics, computer vision and deep learning. Currently, I am specially interested in 3D deep learning, including stereo image/video editing and 3D scene understanding.

EXPERIENCE

SenseTime, Beijing, China

Research Intern

Jan 2018 - Jul 2018

*Supervised by **Wu Wei***

- Develop model to enhance low-light image/video to help to boost high-level vision tasks.
- Develop model to handle face verification under backlit environment.
- Develop model to remove reflections on glasses.

DJI, Shenzhen, China

Summer Intern

Jul 2016 - Sep 2016

- Based on DJI M100, design software to make it automatically takeoff, landing, hovering, going to specific position in the room, grasping dolls and dropping them into a narrow box in room environment.
- Develop algorithm to fuse the data from IMU, Visual Odometry and ultrasonic sensors.

CURRENT PROJECTS

Joint 2D-3D semantic segmentation

Although sparse convolution has greatly reduced the memory usage while applying deep CNN on 3D data for semantic segmentation, 3D segmentation still suffer from the low quality of 3D data, i.e., SOTA method on ScanNet benchmark can only get 28.6 IoU for "picture" class currently, since the quality of picture region in reconstructed point clouds is very low. On the other hand, images have much higher quality while 2D semantic segmentation is lack of geometry information. We plan to jointly do 2D and 3D semantic segmentation by projecting and back projecting information among 2D and 3D space and expect it can boost both 2D and 3D results.

PUBLICATIONS

[3] Deep Line Drawing Vectorization via Line Subdivision and Topology Reconstruction

Y. Guo, Z. Zhang, C. Han, **W. Hu**, C. Li and T. T. Wong

Computer Graphics Forum (special issue on PG 2019), October 2019

[2] DEMC: A Deep Dual-Encoder Network for Denoising Monte Carlo Rendering

X. Yang, **W. Hu**, D. Wang, L. Zhao, B. Yin, Q. Zhang, X. Wei, H. Fu
Computational Visual Media Conference (CVM), 2019

[1] Fast Reconstruction for Monte Carlo Rendering Using Deep Convolutional Networks

X. Yang, D. Wang, **W. Hu**, L. Zhao, X. Piao, D. Zhou, Q. Zhang, B. Yin, Q. Cai, X. Wei
IEEE Access, The Multidisciplinary Open Access Journal, 2018

PROFESSIONAL ACTIVITIES

Conference Reviewer:

MMM2020 (sub-reviewer)

SKILLS

Languages: Python, MATLAB, C/C++

Toolkits: PyTorch, TensorFlow, Git

TEACHING

CSCI1120: Introduction to Computing Using C++

Spring, 2019 - 2020

CSCI3280: Introduction to Multimedia Systems

Fall, 2018 - 2019