June 17, 2021

Yi Wei

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RESEARCH INTEREST

My research interests include computer vision, robotics and computer graphics. In particular, I am interested in 3D scene understanding and 3D reconstruction. I love the research topic which has practical application, such as AR/VR and autonomous driving. I would like to leverage 3D vision techniques to benefit our lives.

EDUCATION

Tsinghua University, Department of Automation Sep 2019 – Present
PhD student in Automation, supervised by Prof. Jiwen Lu

Tsinghua University, Department of Electronic Engineering Aug 2015 – Jun 2019
Bachelor student in Electronic Engineering, GPA: 3.66/4.0 (rank: 6/245)

Beijing No.5 High School Sep 2009 – Jul 2015

EXPERIENCE

ByteDance – Beijing, China 2019
[Intern] Group "SLAM & 3D Vision", Advised by Hengkai Guo.
· Research topic: self-supervised depth estimation, plane-assisted multi-view stereo, multiple plane detection.
· Engineer topic: Shape AR, rectangle tracking.

Microsoft Research Asia - Beijing, China 2018
[Research Intern] Intelligent Multimedia Group. Advised by Dr. Chunyu Wang.
· Research topic: multi-view hand pose estimation.

Tsinghua University – Beijing, China 2018
Intelligent Vision Group (IVG). Advised by Prof. Jiwen Lu.
· Conditional single-view shape modeling for multi-view reconstruction (CVPR 2019).
· Developed an improved evaluation framework to partially address the problem of FID.

Sensetime – Beijing, China 2017
[Research Intern] Group "Video Intelligence" (camera department). Advised by Dr. Hongwei Qin.
· Leveraged quantization and mimic to compress tiny model for object detection (ECCV 2018).
· Developed an framework iterated between quantization and channel pruning for model compression (already been applied to market products).

Tsinghua University – Beijing, China 2017
Visual Computing Lab. Advised by Prof. Guijin Wang.
· Designed the Two-Stream Binocular Network (TSBnet) to detect fingertips from binocular images and created a binocular dataset (VCIP 2017).

DeePhi Tech (Xilinx)– Beijing, China 2016
[Engineer Intern] Advised by Hong Luo.
· Major developer of a real-time detector using Squeezenet and R-FCN (already been applied to company demo).

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PUBLICATIONS

· **Yi Wei*,** Ziyi Wang*, Yongming Rao *, Jiwen Lu and Jie Zhou, "PV-RAFT: Point-Voxel Correlation Fields for Scene Flow Estimation of Point Clouds". CVPR 2021.
· **Yi Wei**, Shang Su, Jiwen Lu and Jie Zhou, "FGR: Frustum-Aware Geometric Reasoning for Weakly Supervised 3D Vehicle Detection". ICRA 2021.
· **Yi Wei*,** Shaohui Liu*, Wang Zhao*, Jiwen Lu and Jie Zhou, "Conditional Single-view Shape Generation for Multi-view Stereo Reconstruction". CVPR 2019.
· **Yi Wei,** Xinyu Pan , Hongwei Qin and Junjie Yan, "Quantization mimic: Towards very tiny cnn for object detection". ECCV 2018.
· **Yi Wei,** Guijin Wang , Cairong Zhang , Hengkai Guo , Xinghao Chen , Huazhong Yang, "Two-stream binocular network: Accurate near field finger detection based on binocular images". VCIP 2017 **Best Student Paper**.

AWARDS

· 2018 Caixiong Scholarship (Tsinghua Research Excellence Scholarship) – 10 people in Tsinghua University
· 2018 Baogang Outstanding Scholarship – 1 person in Tsinghua University
· 2017 Qualcomm Scholarship – 30 people in Tsinghua University
· 2017 Sensetime Undergraduate Scholarship – 30 people in China
· 2017 National Scholarship, Tsinghua University
· VCIP 2017 Best Student Paper Award

TECHNICAL SKILLS

Programming: C/C++, Python, MATLAB, SQL, Verilog, LaTeX, Linux/Unix
Language: Mandarin, English