

# Yueh-Cheng Liu

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## Education

- Master of Science **National Taiwan University, Taipei, Taiwan.**
- 2019 - 2020, Computer Science and Information Engineering (CSIE)
  - **Advisor:** Winston H. Hsu
- Bachelor of Science **National Taiwan University, Taipei, Taiwan.**
- 2014 - 2019, Computer Science and Information Engineering (CSIE)

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## Publications

- Under Submission **360-DFPE: Leveraging Monocular 360-Layouts for Direct Floor Plan Estimation**, [\[arxiv\]](#).  
Bolivar Solarte\*, [Yueh-Cheng Liu\\*](#), Chin-Hsuan Wu, Yi-Hsuan Tsai, Min Sun
- Under Major Revision **Learning from 2D: Contrastive Pixel-to-Point Knowledge Transfer for 3D Pre-training**, [\[arxiv\]](#).  
[Yueh-Cheng Liu](#), Yu-Kai Huang, Hung-Yueh Chiang, Hung-Ting Su, Zhe-Yu Liu, Chin-Tang Chen, Ching-Yu Tseng, Winston H. Hsu
- ICCV 2021 **ReDAL: Region-based and Diversity-aware Active Learning for Point Cloud Semantic Segmentation**, [\[arxiv\]](#) [\[video\]](#).  
Tsung-Han Wu, [Yueh-Cheng Liu](#), Yu-Kai Huang, Hsin-Ying Lee, Hung-Ting Su, Ping-Chia Huang, Winston H. Hsu  
*International Conference on Computer Vision (ICCV), 2021.*
- CVPR 2021 **S3: Learnable Sparse Signal Superdensity for Guided Depth Estimation**, [\[arxiv\]](#).  
Yu-Kai Huang, [Yueh-Cheng Liu](#), Tsung-Han Wu, Hung-Ting Su, Yu-Cheng Chang, Tsung-Lin Tsou, Yu-An Wang, Winston H. Hsu  
*Conference on Computer Vision and Pattern Recognition (CVPR), 2021.*
- CoRL 2020 **A Coarse-To-Fine (C2F) Representation for End-To-End 6-DoF Grasp Detection**, [\[arxiv\]](#) [\[video\]](#).  
Kuang-Yu Jeng, [Yueh-Cheng Liu](#), Zhe Yu Liu, Jen-Wei Wang, Ya-Liang Chang, Hung-Ting Su, Winston Hsu  
*Conference on Robot Learning (CoRL), 2020.*
- 3DV 2019 **A Unified Point-based Framework for 3D Segmentation**, [\[arxiv\]](#) [\[code\]](#) [\[video\]](#).  
Hung-Yueh Chiang, Yen-Liang Lin, [Yueh-Cheng Liu](#), Winston H. Hsu  
*International Conference on 3D Vision (3DV), 2019.*
- 2nd place in ScanNet 3D semantic segmentation benchmark at the time
- ICCVW 2019 **Indoor Depth Completion with Boundary Consistency and Self-Attention**, [\[arxiv\]](#) [\[code\]](#).  
Yu-Kai Huang, Tsung-Han Wu, [Yueh-Cheng Liu](#), Winston H. Hsu  
*International Conference on Computer Vision Workshop (ICCVW RLQ), 2019.*
- TMM 2021 **Dual-Awareness Attention for Few-Shot Object Detection**, [\[arxiv\]](#) [\[code\]](#).  
Tung-I Chen, [Yueh-Cheng Liu](#), Hung-Ting Su, Yu-Cheng Chang, Yu-Hsiang Lin, Jia-Fong Yeh, Wen-Chin Chen, Winston H. Hsu  
*IEEE Transactions on Multimedia (TMM), 2021.*
- TMM 2020 **Raw Image Deblurring**, [\[arxiv\]](#) [\[code\]](#).  
Chih-Hung Liang, Yu-An Chen, [Yueh-Cheng Liu](#), and Winston H. Hsu  
*IEEE Transactions on Multimedia (TMM), 2020.*

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## Research Experience

Research Assistant **National Tsing Hua University, Hsinchu, Taiwan.**  
May, 2021 – Present

**Advisor:** Min Sun, Walon Chiu, and Yi-Hsuan Tsai

**Project:** Monocular 360 floor plan reconstruction

- Proposed a novel sequential floor plan reconstruction pipeline which took a sequence of monocular 360 images as input.

Research Assistant **National Taiwan University, Taipei, Taiwan.**  
September, 2020 – March, 2021

**Advisor:** Winston H. Hsu

**Project:** 3D scene understanding

- Proposed a novel active learning algorithm for training 3D point cloud semantic segmentation, which can save 95% of annotation compared to traditional supervised learning methods. Accepted to **ICCV 2021**. [\[Video\]](#)

- Presented a novel 3D pretraining method by leveraging 2D networks pretrained with rich 2D datasets, which can boost the performances across various real-world 3D downstream tasks.

**Project:** Robotic grasping

- Built a novel point cloud based end-to-end 6-DoF grasp detector that is twenty times faster and more accurate than previous learning-based approaches on unseen cluttered objects. Accepted to **CoRL 2020**. [\[Video\]](#)

- Developed and demonstrated the grasping pipeline with a language referring algorithm that can reason human's instruction and grasp the target object. [\[Video\]](#)

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## Teaching Experience and Work Experience

Software Engineer Intern **Garena, Taipei, Taiwan.**  
June, 2018 – August, 2018

Teaching Assistant **National Taiwan University, Taipei, Taiwan.**

**Instructor:** Prof. Hsin-Mu Tsai

**CSIE 2311:** Network Administration and System Administration (Spring 2017).

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## Activities

System Administrator **IoX Center, National Taiwan University.**  
February, 2018 – August, 2020

System Administrator **Department of Computer Science and Information Engineering (CSIE), National Taiwan University,** Leader of the web service team.  
February, 2016 – June, 2018

- Maintained the web servers and services of the department for all students and faculties.
- Surveyed and improved the system robustness with open-source tools.

Other **Book Translation,** "Refactoring JavaScript: Turning Bad Code Into Good Code" from English to Mandarin, August 2017.

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## Others

- TOEFL: 107/120 (Reading:30, Listening:30, Speaking:22, Writing:25).

- GRE: 329/340 (Quantitative:169, Verbal:160), Writing:4.0

- Fluent at Python, C, and Javascript. Familiar with Git flow, web programming, Robot Operating System (ROS), Pytorch, CUDA, and Linux environments.