

# Yu-Hsuan Yeh

✉ alice12595@gmail.com

🌐 Yeh-yu-hsuan

☎ (+886) 972796765

## EDUCATION

### Carnegie Mellon University (CMU)

Master of Science in Computer Vision

Pittsburgh, PA

Aug. 2022 - Present

### National Yang Ming Chiao Tung University (NYCU)

Master of Science, Artificial Intelligence Graduate Program

Hsinchu, Taiwan

Sep. 2019 - Aug. 2021

### National Chung Hsing University (NCHU)

Bachelor of Science, Electrical Engineering

Taichung, Taiwan

Sep. 2013 - Jun. 2017

## RESEARCH INTERESTS & KEY SKILLS

**Domain:** Deep Learning, Computer Vision, Omnidirectional(360-degree) Image Application

**Programming Languages:** Python(Pytorch & Tensorflow), C/C++, MATLAB

**Os & Tools:** Linux(Ubuntu), Latex

## PUBLICATIONS

- **LED<sup>2</sup>-Net: Monocular 360° Layout Estimation via Differentiable Depth Rendering** [[paper](#)][[github](#)][[project](#)]  
*Yu-Hsuan Yeh\*, Fu-En Wang\*, Min Sun, Wei-Chen Chiu, Yi-Hsuan Tsai*  
[CVPR 2021 Oral]
  - We propose a differentiable layout-to-depth procedure to convert the 360° layout representation into the 360° horizon-depth map, thus enabling the training objective for our layout estimation network to take advantage of 3D geometric information.
- **BiFuse: Monocular 360° Depth Estimation via Bi-projection Fusion** [[paper](#)][[github](#)][[project](#)]  
*Yu-Hsuan Yeh\*, Fu-En Wang\*, Min Sun, Wei-Chen Chiu, Yi-Hsuan Tsai*  
[CVPR 2020] [ICCV 2019 workshop]
  - We propose a two-branch neural network leveraging two common projections – equirectangular and cubemap projections – as inputs to predict the depth map of a monocular 360° image.

## Dataset

- **LayoutMP3D: Layout Annotation of Matterport3D** [[paper](#)][[github](#)]  
*Yu-Hsuan Yeh\*, Fu-En Wang\*, Min Sun, Wei-Chen Chiu, Yi-Hsuan Tsai*  
[Technical Report]
  - We release the first real-world dataset containing paired depth and layout annotations.

## RESEARCH EXPERIENCES

### Enriched Vision Applications Lab, National Yang Ming Chiao Tung University

Graduate Research, Advised by Prof. Wei-Chen Chiu,

Prof. Min Sun and NEC Lab Researcher Yi-Hsuan Tsai

Hsinchu, Taiwan

Sep. 2019 - Aug. 2021

#### ○ 360 Degree Indoor Room Layout Estimation

Utilizing depth information to improve room layout prediction

### Vision Science Lab, National Tsing Hua University

Graduate Research, Advised by Prof. Min Sun,

Prof. Wei-Chen Chiu and NEC Lab Researcher Yi-Hsuan Tsai

Hsinchu, Taiwan

Oct. 2018 - Sep. 2019

#### ○ 360 Degree Depth Estimation

Fusing depth information from two different projections

### Mediacore Lab, National Cheng Kung University

Graduate Research, Supervised by Prof. Jar-Ferr Yang

Tainan, Taiwan

Jul. 2017 - Oct. 2018

#### ○ Unsupervised Monocular Depth Estimation Refinement

Utilizing instance segmentation algorithm to capture objects for accurate depth estimation

### National Chung Hsing University

Undergraduate Research, Supervised by Prof. Jan-Ray Liao

Taichung, Taiwan

Sep. 2015 - Jun. 2016

#### ○ A Fast and Accurate Unconstrained Face Detector

Evaluating importance of parameters of face detection model

## WORK EXPERIENCES

---

### Wistron NeWeb Corporation

*Advance Technology Development AI Lab - AI Summer Intern*

**Hsinchu, Taiwan**

*Jul. 2018 - Aug. 2018*

- Derain - Rain Removal:  
Building variational autoencoder and modifying style transfer models to remove rain

## HONORS & AWARDS

---

- **Outstanding graduate student award:** around 8 people granted every year ( $< 5\%$ ) Jun. 2021
  - in College of Electrical and Computer Engineering
- **Outstanding thesis awards:** only 3 master thesis awards were given Aug. 2021
  - Institute for Public Policy Research(IPPR)
  - Conference on Computer Vision, Graphics, and Image Processing(CVGIP)
- **NovaTek Scholarship:** around 14 people granted every year ( $< 5\%$ ) Aug. 2021
- **NovaTek Scholarship:** around 14 people granted every year ( $< 5\%$ ) Aug. 2020
- **MOST AI scholarship:** a travel subsidy for CVPR 2020 Jun. 2020

## INVITED TALKS

---

- Jul. 2020: CVPR2020 paper sharing [BiFuse], MediaTek Inc and National Taiwan University
- Jul. 2020: CVPR2020 paper sharing [BiFuse], AILabs