

Ning-Hsu (Albert) Wang

☎ +886-922-105-719 ✉ albert.nhwang@gmail.com
[in linkedin.com/in/ning-hsu-albert-wang](https://www.linkedin.com/in/ning-hsu-albert-wang) [github albert100121.github.io](https://github.com/albert100121)

Research Interest

Computer Vision, Machine Learning, 3D Geometry & Reconstruction, VR/AR, 360° Vision, Computational Photography, Robotic Perception, Generative AI

EDUCATION BACKGROUND

National Tsing Hua University

Master of Science in Electrical Engineering, advised by Prof. Min Sun

GPA: 4.3/4.3

Hsinchu, Taiwan

Feb. 2018 – Aug. 2020

National Chiao Tung University

Bachelor of Science in Mechanical Engineering

Last 60 credits GPA: 3.74/4.3

Hsinchu, Taiwan

Sep. 2013 – Jun. 2017

PUBLICATIONS

Ning-Hsu Wang, Yu-Lun Liu, “Depth Anywhere: Enhancing 360 Monocular Depth Estimation via Perspective Distillation and Unlabeled Data Augmentation”, Neurips 2024. [\[link\]](#)

Ning-Hsu Wang, Ren Wang, Yu-Lun Liu, Yu-Hao Huang, Yu-Lin Chang, Chia-Ping Chen, Kevin Jou, “Bridging Unsupervised and Supervised Depth from Focus via All-in-Focus Supervision”, ICCV 2021. [\[link\]](#)

Cheng Sun, Chi-Wei Hsiao, **Ning-Hsu Wang**, Min Sun, Hwann-Tzong Chen, “Indoor Panorama Planar 3D Reconstruction via Divide and Conquer”, CVPR 2021 Oral. [\[link\]](#)

Ning-Hsu Wang, Bolivar Solarte, Yi-Hsuan Tsai, Wei-Chen Chiu, Min Sun, “360SD-Net: 360° Stereo Depth Estimation with Learnable Cost Volume”, ICCV-W 2019 Spotlight, ICRA 2020. [\[link\]](#)

PATENT

Methods and Apparatuses of Depth Estimation from Focus Information

Ren Wang, Yu-Lun Liu, Yu-Hao Huang, Ning-Hsu Wang

U.S. Patent no. 11,967,096, filed Feb. 2022, published Sep. 2022, issued Apr. 2024. [\[link\]](#)

MediaTek

Feb. 2022

EXPERIENCE

Google

Image Processing and Machine Learning Engineer

Taipei, Taiwan

Jun. 2024-Present

- Led the design and integration of Generative AI, Video Super-Resolution (VSR), and Computational Photography machine learning algorithms.
- Finetuned and optimized machine learning algorithms for portable hardware devices.
- Oversaw the performance and effectiveness of all machine learning features within the team and managed cross-team algorithm integration.

Taiwan AILabs, Metaverse Team

Machine Learning Research Engineer

Taipei, Taiwan

Aug. 2021-Apr. 2024

• Metaverse Project

- Led the optimization of the **Omnidirectional Video Face Detection and De-identification** functionality for virtual scene generation, resulting in a notable **400% improvement in inference speed (5 times faster)**.
- **Integrated EquiConv with optical flow method (RAFT)** to enhance stability and user experience in **virtual scene walk-through**, while also contributing to the development of 4 additional features.
- Introduced a novel **light-source representation** and spearheaded the development of a NN model and

dataset for **character and object insertion, lighting, and accurate shadow casting in virtual environments.** (Successfully delivered the feature from inception to completion **within a six-month timeframe**)

- Formulated an inclusive strategy for advancing a **multi-task Generative AI (stable-diffusion)** algorithm, emphasizing style generation and super resolution, with additional support for panorama image generation.
- Developed a 360 projection converter to effectively address distortion challenges when utilizing neural network models on 360-degree images.

- **Video Enhancement Project**

- Engineered a high-performance video enhancement pipeline leveraging cutting-edge **video decompression and super-resolution** techniques. Demonstrated exceptional results, achieving comparable performance to the primary competitor on documentary videos within a month.

- **Avatar and Virtual Studio**

- Orchestrated the design of the algorithmic development pipeline and development for avatar movement and **human motion generation**, while also actively participating in algorithm development.
- Engineered the implementation of the **text-to-image** feature in a virtual studio, leveraging state-of-the-art **Generative AI** models.
- Assisted in improving video matting techniques for enhanced background removal.

MediaTek, MM, MTD, IVP

Hsinchu, Taiwan

Research intern in Computer Vision

Feb. 2020-Feb. 2021

- Published an **IEEE conference paper** in Computer Vision (**ICCV 2021**) and obtained a **US Patent** in the field of depth estimation for images with bokeh effects (shallow depth of field).
- Introduced a novel dataset for depth estimation on blurred images and developed an innovative unsupervised training technique.
- Demonstrated exceptional performance by surpassing SOTA methods with significant margins on multiple datasets: DDFD-12-Scenes (5.5%), HCI-4D-Light-Field (20%), and Defocus-Net (27%).

VSLab, National Tsing Hua University

Hsinchu, Taiwan

Graduate Research Assistant

Feb. 2018-Aug. 2020

- Published **two IEEE conference papers** in the fields of Computer Vision and Robotics (**ICRA 2020, CVPR 2021 Oral**).
- Led the 360° Stereo Project, under the guidance of [Prof. Min Sun](#), [Prof. Wei-Chen Chiu](#), and [Dr. Yi-Hsuan Tsai](#); focused on planar reconstruction, co-advised by [Prof. Hwann-Tzong Chen](#).
- Presented two 360° stereo datasets and developed a novel deep neural network for depth estimation on 360° stereo images (ICRA 2020).
- Introduced a new benchmark and method utilizing indoor human structures and 360° images for indoor panorama planar reconstruction (CVPR 2021 Oral).

PROFESSIONAL ACTIVITY

Served as a reviewer for:

- Journals: RA-L, TPAMI, IJCV
- Conferences: AAAI 2023, CVPR 2023, ECCV 2024

SKILLS

Programming: Python, C/C++, HTML/CSS

Tools: PyTorch, TensorFlow, OpenCV, Scikit-Learn, Vim, Linux, Git, \LaTeX

Software/Hardware: LabVIEW, Matlab, LTSpice, ANSYS-Fluent, AutoCAD, Solidworks, Arduino, 8051

Language: Mandarin (native), English (fluent, TOEIC: 900)

HONORS & AWARDS

Honorary Member of The Phi Tau Phi Scholastic Honor Society of the Republic of China	2020
Appier Conference Scholarship for Top Researches on Artificial Intelligence	2020
Arctic Code Vault Contributor (GitHub)	2020