Ning-Hsu (Albert) Wang

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Research Interest

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

EDUCATION BACKGROUND

National Tsing Hua University   **Hsinchu, Taiwan**
Master of Science in Electrical Engineering, advised by Prof. Min Sun   *Feb. 2018 – Aug. 2020*
GPA: 4.3/4.3

National Chiao Tung University   **Hsinchu, Taiwan**
Bachelor of Science in Mechanical Engineering   *Sep. 2013 – Jun. 2017*
Last 60 credits GPA: 3.74/4.3

PUBLICATIONS

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", ICRA 2020, ICCV 2019 360PI Workshop Spotlight. [link]

PATENT

Methods and Apparatuses of Depth Estimation from Focus Information   **MediaTek**
*Ren Wang, Yu-Lun Liu, Yu-Hao Huang, **Ning-Hsu Wang***   *Feb. 2022*
U.S. Patent US20220309696A1, published Sep. 2022

EXPERIENCE

Taiwan AILabs   **Taipei, Taiwan**
Machine Learning Engineer   *Aug. 2021-Present*

- In charge of the **Face Detection and De-identification** project and improved the inference speed by **400**% (**5 times faster**).
- Implemented and modified optical flow SOTA algorithms (Raft) and EquiConv to adapt to 360° images for the need of **4 projects and 80**% **of the members of the team**.
- Initiated and developed a new **light-source estimation method and representation** for object insertion within a limited period of time. (Designed and developed a new Dataset and NN model in **3 months**; product landed in **2 months**)

MediaTek, MM, MTD, IVP   **Hsinchu, Taiwan**
Research intern in Computer Vision   *Feb. 2020-Feb. 2021*

- Published one IEEE conference paper in the Computer Vision field (**ICCV 2021**) and one **US Patent** with topics related to depth estimation on images with bokeh effects (shallow DoF).
- Presented a new depth estimation dataset on blurred images and a new unsupervised training technique.
- Outperformed SOTA methods on DDFF-12-Scenes (5.5%), HCI-4D-Light-Field (20%) and Defocus-Net (27%) Dataset.

VSLab, National Tsing Hua University   **Hsinchu, Taiwan**
Graduate Research Assistant   *Feb. 2018-Aug. 2020*

- Published two IEEE conference papers in the Computer Vision and Robotics fields (**ICRA 2020, CVPR 2021 Oral**).
- Led the 360° Stereo Project, advised by Prof. Min Sun, Prof. Wei-Chen Chiu and Dr. Yi-Hsuan Tsai; worked on Planar Reconstruction, co-advised by Prof. Hwann-Tzong Chen.
- Presented two 360° stereo datasets and a novel DNN targeting depth estimation on 360° stereo images (ICRA 2020).
- Proposed a new benchmark and a new method leveraging the phenomenon of indoor human structures and 360° images for indoor panorama planar reconstruction (CVPR 2021 Oral).

Young Entrepreneurs of the Future, Epoch Foundation   **Taipei, Taiwan**
Technical Lead   *Jan. 2018-July. 2018*

- Led a technical team in a nationwide startup competition and won Second Place in the first stage of the two stages.
- Designed an electronic mask-like device with active noise canceling for both meeting and gaming.

PROFESSIONAL ACTIVITY
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Reviewer: RA-L 2022, TPAMI 2022, AAAI 2023

SKILLS
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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)

HONORS & AWARDS
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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