Zhi-Hao Lin

Curriculum Vitae

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https://zhihao-lin.github.io

Research Interests

3D Computer Vision, Neural Rendering, Inverse Rendering.

Education

Fall. 2022 - present **University of Illinois Urbana-Champaign**, USA.
Ph.D. in Computer Science,
Advisor: Prof. Shenlong Wang link

Sept. 2019 - Apr. 2021 **National Taiwan University**, Taiwan.
M.S. in Communication Engineering,
Advisor: Prof. Yu-Chiang Frank Wang link

Sept. 2015 - Jun. 2019 **National Taiwan University**, Taiwan.
B.S. in Electrical Engineering

Publications

[6] **UrbanIR: Large-Scale Urban Scene Inverse Rendering from a Single Video**.
Zhi-Hao Lin, Bohan Liu, Yi-Ting Chen, David Forsyth, Jia-Bin Huang, Anand Bhattad, Shenlong Wang
Under Review, 2023. project paper

[5] **Sim-on-Wheels: Physical World in the Loop Simulation for Autonomous Driving**.
Yuan Shen*, Bhargav Chandaka*, **Zhi-Hao Lin**, Albert Zhai, Hang Cui, David Forsyth, Shenlong Wang
Under Review, 2023. project paper

[4] **ClimateNeRF: Extreme Weather Synthesis in Neural Radiance Field**.
Yuan Li* ,**Zhi-Hao Lin***, David Forsyth, Jia-Bin Huang, Shenlong Wang
ICCV, 2023. project paper

[3] **NeurMiPs: Neural Mixture of Planar Experts for View Synthesis**.
Zhi-Hao Lin, Wei-Chiu Ma, Hao-Yu Hsu, Yu-Chiang Frank Wang, Shenlong Wang
CVPR, 2022. project paper code

[2] **Learning of 3D Graph Convolution Networks for Point Cloud Analysis**.
Zhi-Hao Lin, Sheng-Yu Huang, Yu-Chiang Frank Wang,
TPAMI, 2021. paper IEEE

[1] **Convolution in the Cloud: Learning Deformable Kernels in 3D Graph Convolution Networks for Point Cloud Analysis**.
Zhi-Hao Lin, Sheng-Yu Huang, Yu-Chiang Frank Wang,
CVPR, 2020. paper supp video code

Research Experience

May. 2023 - Present **Computational Photography Group, Meta**.
Research Scientist Intern
Advisor: Changil Kim link

Apr. 2021 - Feb. 2022 **Vision Group**, University of Illinois Urbana-Champaign.
Visiting Student
Advisor: Prof. Shenlong Wang link
- Proposed a novel 3D representation that represents scenes with multiple learnable planes for novel view synthesis,
- Outperformed NeRF and MPI methods in extreme view extrapolation. [**CVPR**, 2022]

Sept. 2018 - Jan. 2022 **Vision & Learning Lab**, National Taiwan University, Taipei, Taiwan.
Master Student, **Research Assistant**
Advisor: Prof. Yu-Chiang Frank Wang link
- Provided a thorough study on 3D reconstruction algorithms with various representations.
- Proposed a point cloud analysis framework that is shift and scale-invariant, and demonstrated robustness in object-level tasks. [**CVPR**, 2020]
- Verified that our point cloud analysis framework is robust to object rotation and outlier points, and outperformed previous works in scene-level task. [**TPAMI**, 2021]

Honors & Awards

2022 **Best Master Thesis Award**, Graduate Institute of Communication Engineering, NTU.
2021 **Best Master Thesis Award**, The Chinese Image Processing and Pattern Recognition Society (IPPR).
2021 **Best Master Thesis Award**, Taiwanese Association for Artificial Intelligence (TAAI).
2021 **Best Master Thesis Award**, Taiwan Society of Architectural Medicine (TSAM).
2020 **Novatek Education Foundation Scholarship**.
2020 **E.SUN Commercial Bank Scholarship**.

Teaching Experience & Talks

Nov. 2021 **Invited talk**, Taiwanese Association for Artificial Intelligence (TAAI).
Aug. 2021 **Invited talk**, The Chinese Image Processing and Pattern Recognition Society (IPPR).
Nov. 2020 **Invited talk**, The 4th Workshop on Augmented Intelligent and Interaction, Taiwan.
Fall 2019 **Teaching Assistant**, Deep Learning for Computer Vision.
Fall 2019 **Teaching Assistant**, Environmental Protection Service.
Spring 2019 **Teaching Assistant**, Signal & System.

Skills

Programming C++, Python (PyTorch), LaTeX
Language Chinese (Mandarin), English