Yi-Chuan Huang

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Education

National Yang Ming Chiao Tung University (NYCU) Hsinchu, Taiwan
Ph.D. in Computer Science — Advisor: Yu-Lun Liu *Sep. 2023 – Present*

Courses: Deep Learning (A), Optimization Algorithms (A), Machine Learning for Signal Processing (A+), Edge AI (A+), Operating System (A), Image Manipulation Techniques & Visual Effects (A+), Artificial Intelligence (A).

National Yang Ming Chiao Tung University (NYCU) Hsinchu, Taiwan
M.S. in Applied Art — Thesis: Personalized Chinese Handwriting Font Synthesis Method *Sep. 2021 – Jun. 2023*

Courses: Image Processing, Intro to Signal Processing, Intro to Computer Graphics.

Publications

AuraFusion360: Augmented Unseen Region Alignment for Reference-based 360° Unbounded Scene Inpainting (*Project Page*)
Chung-Ho Wu, Yang-Jung Chen*, Ying-Huan Chen, Jie-Ying Lee, Bo-Hsu Ke, Chun-Wei Tuan Mu,* ***Yi-Chuan Huang****, Chin-Yang Lin, Min-Hung Chen, Yen-Yu Lin, Yu-Lun Liu. (CVPR 2025)*

- Developed a 360° unbounded scene inpainting framework that integrates **diffusion priors** with **depth-aware 3D Gaussian Splatting (3DGS)** to achieve high-quality object removal with **geometric accuracy** and **multi-view consistency**.

Voxify3D: From Mesh to Voxel Art with Palette Discretization and Semantic Guidance (*Project Page*)
Yi-Chuan Huang*, Jie-Wen Chen, Chris Chein, Yu-Lun Liu. (under review, ICLR 2026)*

- Proposed a differentiable pipeline that transforms 3D meshes into stylized **voxel art** by optimizing a voxel grid under six-view pixel-art supervision with orthographic projection, guided by palette-based **color quantization**, **semantic guidance**, and differentiable rendering.

FOV-Outpainter: Training with Extrapolated Views Beats Novel View Generation
Yi-Chuan Huang*, Yu-Lun Liu. (under submission, CVPR 2026)*

- Introduced a **zero-shot multi-view diffusion** approach for **view extrapolation**, expanding the training field-of-view to enhance **3D reconstruction** and **novel view synthesis** without increasing the number of sparse input views.

Projects

Knowledge Distillation for Parameter-Efficient Large Language Models (*Project Page*)

- Distilled knowledge from **LLaMA-3.2-3B-Instruct** to **LLaMA-3.2-1B-Instruct**.
- Distilled on WikiText-2 with KL/MSE loss, reaching **11.72** perplexity on the student model.

Layered Vectorization of Natural Images for Editable SVG Graphics (*Project Page*)

- Converted natural images into **layered SVGs** for intuitive and editable graphics.
- Achieved structure-preserving vectorization for **AI-assisted design and editing**.

Experience & Honors

Teaching Assistant, ***Image and Video Generation*** (NYCU) *Sep. 2025*
Reviewer, Pacific Graphics 2025 (PG 2025) *Jun. 2025*
Outstanding Teaching Assistant, ***Signals and Systems*** (Award, NYCU) *Sep. 2024*
Ph.D. Qualification Passed — Ph.D. Candidate (NYCU) *Jun. 2024*

Skills

Programming: Python, PyTorch, CUDA (Basic), C, C++, HTML, JS
Tools: OpenCV, OpenGL, Open3D, Blender, COLMAP, Unity, Linux

Research Interests

Deep Learning, Generative Modeling, 3D Vision, Neural Rendering, Diffusion Models, and Multi-View Reconstruction.