

Ting-Hsun (Austin) Chi

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Education

Stanford University

Master of Science in Electrical Engineering

Stanford, CA

09/2026 - Expected 03/2028

National Taiwan University

Bachelor of Science in Electrical Engineering

Taipei, Taiwan

09/2021 - 06/2025

GPA: 4.27/4.3; Rank: 2/197 | Bachelor Thesis Dean's Award | 4x Dean's List | Presidential Award

Coursework: Computer Vision, Deep Learning for Computer Vision, Machine Learning, Linear Algebra, Probability and Statistics

Skills

Programming: Python, C/C++, MATLAB, Metal

Machine Learning: PyTorch, OpenCV, diffusion models, transformers

Graphics: 3D reconstruction, neural rendering, 3D Gaussian Splatting, light field display, OpenGL

Experience

Inventec AI Center

Machine Learning Research Intern

Taipei, Taiwan

03/2025 - 12/2025

- Built a 3D reconstruction pipeline in Python and OpenCV that converted 2D laptop technical drawings into editable 3D models, reducing manual modeling time by approximately 99%.

National Taiwan University

Teaching Assistant, Deep Learning for Computer Vision

Taipei, Taiwan

09/2025 - 12/2025

- Created a sparse-view 3D Gaussian Splatting assignment and mentored 200+ students through weekly TA hours.

IBM Almaden Research Center

Research Intern, AI for EDA

San Jose, CA

06/2024 - 09/2024

- Studied LLM question answering for medium-to-large RTL designs; identified retrieval bottlenecks and reduced context requirements by 80%.
- Designed a structured knowledge-base retrieval system for RTL question answering, improving LLM answer accuracy by 27%.

Research

Vision and Learning Lab

Undergraduate Researcher, Advisor: Prof. Yu-Chiang Frank Wang

Taipei, Taiwan

06/2024 - 01/2026

- Developed a sparse voxel octree initialization algorithm in PyTorch using vision-model priors for neural rendering; improved geometry accuracy by 12% over 3D Gaussian Splatting-based baselines.

Multimedia Processing and Communications Lab

Undergraduate Researcher, Advisor: Prof. Homer H. Chen

Taipei, Taiwan

01/2023 - 01/2026

- Proposed a display-calibrated metric for light field AR artifacts, achieving 0.89 linear correlation (LCC) with subjective test results.
- Designed and analyzed pairwise-comparison studies with 26 participants; derived Just-Objectable Difference thresholds for artifact visibility in AR systems.

Selected Projects

StageLight: A Multi-Concept Personalization Framework [\[Link\]](#)

Fall 2024

Course Final Project, Deep Learning for Computer Vision

- Led a four-member team to build a diffusion-based, multi-step inpainting pipeline combining LLM prompt decomposition and instance segmentation for multi-concept personalization; placed 1st in the course competition.
- Introduced Spotlight Prompting for localized diffusion guidance, improving CLIP-I by 6% over textual inversion.

Metal 3D Rendering Engine [\[Link\]](#)

C++, Apple Metal, Metal Shading Language, CMake

- Built a C++/Metal 3D rendering engine with vertex and fragment shaders, indexed meshes, texture sampling, and depth testing; managed vertex, index, and texture resources.

Publications and Manuscript

- T.-H. Chi et al., "Advancing Structured Priors for Sparse Voxel Surface Reconstruction," Preprint. [\[Link\]](#)
- T.-H. Chi et al., "Perceptual Tolerance of Split-Up Effect for Near-Eye Light Field Display," IEEE ISMAR 2023. [\[Link\]](#)
- T.-H. Chi et al., "RTLExpain: A Structured Approach to RTL Code Summarization and Question Answering for Medium-to-Large Designs Using LLMs," ACM/IEEE MLCAD 2025. [\[Link\]](#)