Daniel Song

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Education

Stanford University, *Stanford, CA* September 2025 – Present
M.S. in Computer Science – Visual Computing Specialization

University of California, Irvine, *Irvine, CA* September 2021 – December 2024
B.S. in Computer Science – Intelligent Systems Specialization
GPA: 4.0/4.0 – Summa Cum Laude

Research Experience

Undergraduate Research – Computer Vision January 2024 – December 2024
University of California, Irvine

- Conducted an independent research study under Professor Berg to explore areas such as knowledge distillation in image classifiers and Neural Radiance Fields (NeRF).
- Reimplemented papers to replicate authors' results using PyTorch, specifically for response-based and feature-based knowledge distillation, and NeRF.
- Developed a user-friendly module for training NeRF models and created a comprehensive guide aimed towards helping other students to recreate NeRFs.
- Participated in weekly meetings with the computer vision group, discussing ongoing research and recent papers on transformers, diffusion, and generative models, building a strong foundation in advanced generative techniques and concepts.

Undergraduate Research – Calit2 ML/Industrial IoT January 2024 – June 2024
University of California, Irvine

- Started a project in the Calit2 lab with postdoc Researcher Yutian Ren to create an interactive VR environment, with the goal of utilizing a self-labeling method for adaptive ML for intent prediction in VR applications.
- Created an environment for the Meta Quest 3 using Unity to stream the upper-body pose, hand pose, and visual data in real-time to a Flask server.

Undergraduate Research – Quantify April 2024 – September 2024
University of California, Irvine

- Initiated a research project under Professor Wong-Ma to evaluate the impact of integrating news articles as context for a reinforcement learning-based stock trading model.
- Worked on developing a PPO-based stock trading agent with a custom network that includes an attention module to incorporate sentence embeddings from recent news, generated using a sentence transformer and an LLM.
- Developed Python modules to retrieve and preprocess years of minute-level stock market data and news articles.

Undergraduate Research – TLC April 2024 – October 2024
University of California, Irvine

- Collaborated with PhD student Jason Lee Weber, Dr. Wong-Ma, and Dr. Gago-Masague in the Teaching and Learning in Computing lab (TLC) to analyze student behaviors across multiple submissions for autograder-based coding assignments.
- Created a Python API wrapper for an online autograding platform, a multi-threaded web scraper to collect submissions for, and performed data-processing for analysis.

Research Assistant (Part-Time) July 2022 – August 2022
KRIHS (Korea Research Institute for Human Settlements)

- Assisted researchers in the real estate market research center by developing programs to automate tasks for processing and generating statistical data.
- Used Python to create a generator for Excel files that combined housing market data provided by the South Korean government to view statistical numbers regarding the impact of events such as the COVID-19 outbreak on the market.
- Aided in research for the US market data in order to compare with the current South Korean housing market situation.

Posters / Presentations

JL. Weber, H. Park*, **D. J Song***, J. Apillanes, B. Martinez Neda, J. Wong-Ma, and S. Gago-Masague. Investigating Autograder Usage in the Post- Pandemic and LLM Era. poster in *the 56th ACM Technical Symposium on Computer Science Education (SIGCSE TS '25).*

** Both authors contributed equally to this research*

Projects

Custom Voxel Engine

- Built a custom voxel engine in C++ and OpenGL with chunk-based, procedurally generated, modifiable infinite worlds using multi-threaded chunk and mesh generation.
- Features dynamic texture atlas packing, batched font rendering, camera frustum culling, voxel-based ambient occlusion, flood fill lighting, and constant-width 3D line rendering.

Real-Time Ray Tracing Engine

- Developed a real-time ray tracing engine in C++ and CUDA capable of displaying Lambertian and reflective materials using sparse voxel octrees for scene representation.
- Implemented the Edge-Avoiding À-Trous Wavelet Transform to denoise the rendered output in real-time.

Teaching Experience

ICS 46 – Data Structure Implementation and Analysis
University of California, Irvine

Learning Assistant	Winter 2023
Paid Tutor	Fall 2023
Paid Tutor (Head Learning Assistant)	Winter 2024
Paid Tutor (Head Learning Assistant)	Fall 2024

ICS 53 – Principles in System Design
University of California, Irvine
Learning Assistant — Winter 2024

ICS 31 – Introduction to Programming
University of California, Irvine
Learning Assistant — Fall 2023

Awards

OC-ACM Award for Excellence in Computer Science — June 2025

- Nominated by a faculty member at UCI for the Orange County ACM Chapter.

Phi Beta Kappa Society Member — Since May 2025

- Nominated by UCI's Mu Chapter as part of the top 3% of graduating seniors in 2025.