David Yan

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RESEARCH INTERESTS

I am a computer vision and machine learning researcher. One goal of mine is to understand *what makes good training data* for downstream tasks and representations by leveraging controllable synthetic data. I have broad interests in 3D perception, representation learning, robotics, and generative models.

EDUCATION

Princeton University 08/22 - 05/26
Bachelor of Science in Engineering - Computer Science *Current GPA: 3.977/4.0*

PUBLICATIONS

1. Procedural Dataset Generation for Zero-Shot Stereo Matching.
   David Yan, Alexander Raistrick, Jia Deng.
   arXiv preprint, 2025.

2. Infinigen Indoors: Photorealistic Indoor Scenes using Procedural Generation.
   Alexander Raistrick*, Lingjie Mei*, Karhan Kaan Kayan*, **David Yan**, Yiming Zuo, Beining Han,
   Hongyu Wen, Meenal Parakh, Stamatis Alexandropoulos, Lahav Lipson, Zeyu Ma, Jia Deng.
   CVPR, 2024.

RESEARCH

Stereo Matching/3D Reconstruction

- Performed the first comprehensive study on what parameters matters for synthetic stereo matching data.
- Created and released a novel stereo matching dataset that achieves SOTA zero-shot performance using pre-existing network architectures.
- Developed a open-source synthetic data generator optimized for stereo matching, based on Infinigen.

Open-Source Synthetic Data Generation for 3D Vision

- Developer for the [Infinigen](#) project (CVPR 2023, 2024), a procedural generator of diverse, high-quality training data for computer vision research (6k+ Github Stars).
- Created an 3D export utility for Infinigen Indoors (CVPR 2024) that enables the automatic conversion of generated Infinigen assets into standard file formats such as .obj or .usd. The exporter supports *scene-scale* export to the USD file format for embodied agent training in robotics simulators like NVIDIA Omniverse.
- Performed system wide migration of the Infinigen system from Blender 3.0 to 3.6, enabling the project to be structured as a Python package and vastly improving ease-of-install.

HONORS AND AWARDS

Shapiro Prize for Academic Excellence 2023, 2024
- Awarded to the top 3% of Princeton freshman and sophomore students for academic achievement

U.S. Presidential Scholar 2022

Research Science Institute (RSI) Scholar 2021

Work Experience

Visiting Student - Stanford Vision and Learning Lab   June 2025
- Researching visual program synthesis and self-verification with language models.

Computer Vision Research - Princeton Vision and Learning Lab   January 2023 - Present
- Researching synthetic data generation for 3D computer vision tasks.

Princeton ACM Officer   2025 - Present
- Run a weekly computer vision reading group, where I lead discussion on selected papers in computer vision research. The goal of the reading group is to increase engagement into undergraduate computer science research, particularly in computer vision and related subfields.

Teaching Assistant   Feb 2024 - Present
- COS240 (Discrete Math) - Spring 2024

HackPrinceton Organizer - Operations Team   September 2022 - 2024
- Managed admissions, housing, and food for over 200+ hackers.

Past Publications

Co-Inventor of Electrochemically Driven Carbon Dioxide Separator   2020
- U.S. patent Serial No. 63/027,760, 2020; First to reduce the invention to practice.