Danny Tran

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Education

University of California, Berkeley **Aug. 2021 – Mar. 2025**
Bachelor of Arts in Computer Science - GPA: 3.941 *Berkeley, CA*

University of Texas, Austin **Aug. 2025 – Present**
PhD in Computer Science *Austin, TX*

Relevant Coursework

- Deep Neural Networks
- Deep RL
- Computer Vision
- Machine Learning
- Optimization
- Probability
- Computer Graphics
- Algorithms
- Vector Calculus

Publications

Navigation World Models | *CVPR 2025 (Best Paper Honorable Mention)*
- We introduce Navigation World Models (NWM), controllable video generation model that predicts future visual observations based on past observations and navigation action. NWM exhibits improved navigation planning skills either by planning from scratch or by ranking proposals from an external navigation policy.

EgoPet: Egomotion and Interaction Data from an Animal's Perspective | *EECV 2024*
- We introduce EgoPet, a new egocentric video dataset of various animals. We define two in-domain benchmark tasks that capture animal behavior, and a third benchmark to assess the utility of EgoPet as a pretraining resource to robotic quadruped locomotion.

Experience

Darrell Lab | Berkeley Artificial Intelligence Research **Jan. 2023 – Present**
Undergraduate Researcher *Berkeley, CA*
- Worked with Masked Auto Encoding for Image and Video Generation in the context of prompting via inpainting.
- Deployed visual navigation policy on Unitree Go 1.
- Experience with dataset of egocentric animal videos, Visual Interaction Prediction, and Locomotion Prediction.
- World modeling in the context of navigation.

Berkeley Codeology **August 2023 – May 2024**
Project Leader *Berkeley, CA*
- Led 10-week educational program covering foundational ML topics such as deep learning, CNNs, RNNs, and transformers. Taught weekly lectures to 5 students and developed programming assignments in PyTorch and OpenCV.
- Guided students to implement models for neural style transfer, traffic detection, and video motion capture.

UCSF Musculoskeletal and Quantitative Imaging Research Group **August 2022 – May 2023**
Undergraduate Researcher *San Francisco, CA*
- Trained CNNs and vision transformers for sex classification based on facial features in CT scans; achieved accuracy of over 80% with DenseNet-based model. Integrated Grad-CAM visualizations for network interpretability analysis.

UCSF Big Data in Radiology Lab **August 2022 – December 2022**
Undergraduate Researcher *San Francisco, CA*
- Developed NLP pipeline to process 4000+ medical reports and identify abnormalities using Python and scikit-learn.
- Utilized data augmentation and hyperparameter search to fine-tune support vector machines for text classification.

UC Berkeley EECS Department **January 2022 – May 2022**
CS61B (Data Structures and Algorithms) Academic Intern *Berkeley, CA*
- Facilitated weekly office hours for UC Berkeley's introductory data structures course of 1000+ students. Answered questions, debugged assignments, and presented materials on OOP, graphs, trees, sorting, and runtime complexity.

Projects

Reinforcement Learning for Public Transit | *Python*
- Optimized public transit scheduling with deep RL, exploring the impact of domain randomization on training agents for bus bunching. Evaluated efficacy of various RL algorithms such as PPO.

2D Smoke Simulator | *JavaScript, three.js*
- Built interactive web simulation of realistic smoke effects; implemented vorticity confinement, buoyancy, and shaders.

Technical Skills

Languages: Python, Java, C, C++, JavaScript, HTML/CSS, SQL, RISC-V Assembly
Technologies/Frameworks: Git, Google Cloud Platform (GCP), REST API, JUnit, Flask, three.js, PyTorch, scikit-learn, NumPy, CVXpy, Matplotlib