DANIEL GUO

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EDUCATION

University of California, Los Angeles (UCLA), Los Angeles, CA   Expected June 2026
Computer Science
- Relevant course work: Combat Robotics, Introduction to Computer Science I, Data Structures and Algorithms, Introduction to Computer Organization, Software Construction, Linear Algebra, Discrete Math

COMPUTER SKILLS

- Programming Languages: Python, JavaScript, C++, C#, C, HTML, CSS, Bash
- Libraries: PyTorch, NumPy, Pandas, Dask
- Frameworks: Vue.js, React, Node.js, MongoDB
- Other: Git, Docker, Unity, SolidWorks

EXPERIENCE

CTESPP Preceptorship | *Preceptor - Career Technical Education Summer Preceptorship*   June 2022 - July 2022
- Collaborated with 8 other preceptors under Dr. Harsh Verma to parse through Amtrak train departure and arrival times using Javascript and present times on front end using Vue.js, HTML, and CSS while designing and configuring Raspberry Pi models for occupancy detection in trains

PROJECTS

Purrlicious Boba | *Full-stack Developer*   June 2024 - Present
- Partnered with 5 programmers to design responsive website for local cat cafe and boba shop using TypeScript, Tailwind CSS, and AWS backend services
- Created features for users to find shop information, view drink menu, join newsletter, and contact business

BruinBowl | *Full-stack Developer*   March 2024 - June 2024
- Collaborated with 6 students to design interactive web application, allowing users to quiz themselves on UCLA trivia, while managing version control with Git
- Designed and implemented user and gameplay functionality using MERN stack; created secure user login and authentication in backend alongside features scalable for hundreds of users: question search, real-time leaderboards, and user profiles

UCLA ACM AI | *Projects Member - Emoji GAN*   January 2024 - June 2024
- Cooperated with 3 team members to learn and apply Python, PyTorch, and NumPy skills to design a dataset, data loader, and convolutional neural network for organizing and processing emoji image data
- Implemented generator, discriminator, and training loop to develop a novel emoji GAN model for expressive image generation and discrimination, able to generate and display increasingly realistic emojis each epoch (4 seconds)

UCLA ACM Studio | *Project Rudd - Programmer*   January 2024 - June 2024
- Collaborated with 7 team members to build and test a videogame in style of 2D platformer using Unity 2D and C#
- Drafted and deployed movement, collision detection, momentum, gravity, and integrated cutscenes while maintaining version control through Git, reviewing over 50 commits for bugs

RESEARCH EXPERIENCE

Trustworthy AI Lab | *Student Researcher*   March 2024 - Present
- Analyzed and enhanced data loading efficiency of CTGAN (tabular data synthesizer) by 100 times through partitioning of training data with Dask DataFrames while ensuring compatibility with PyTorch tensor datasets
- Utilized PyTest to rigorously test column transformers and reverse transformations, ensuring model integrity and reliability throughout pipeline, while packaging Python library using Docker to avoid environment inconsistencies

Cyber Summer Research Fellowship | *Cybersecurity Researcher*   July 2024 - September 2024
- Developed convolutional neural network using PyTorch to detect image steganography (LSB, PVD, DCT, FFT), achieving over 87% accuracy in multiclass classification
- Drafted and implemented methods for argument parsing, model freezing and unrolling, and displaying images from dataset of over 33,000 clean and steganographically altered images
- Co-authored Deep Learning for Steganographic Image Detection, accepted by 2024 IEEE MIT Undergraduate Research Technology Conference (URTC)

ACCOMPLISHMENTS

- Awards: UPE Membership, CSF Lifetime Membership, NHS Lifetime Membership, AP Scholar with Distinction (2022-23), AP Scholar with Honor (2021), Dean's Honor List (2024), Class of 2023 Valedictorian (Vista del Lago High School)