

Daksh Shah

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EDUCATION

Computer Science B.S. University of California, Santa Cruz Sep. 2022 - June 2026

Mathematics Theory and Computation B.S. University of California, Santa Cruz Sep. 2022 - June 2026

Courses: Distributed Systems, Computer Graphics, Deep Learning, Algorithm Analysis, Data Structures & Algorithms, Advanced Linear Algebra,

Grad-Level Courses: Advanced Computer Vision, Advanced Machine Learning, Artificial Intelligence

Cumulative GPA: 3.88

EXPERIENCE

Dew Software Inc — Angular, PostgreSQL, Spring Boot 3, Java June 2025 - September 2025
Software Engineer Intern Fremont, CA

- Onboarded as an Intern, gaining initial understanding of the company's security vulnerability tracker, developed with Spring Boot, Java, AngularJS, and PostgreSQL.

Visualization and Interactive Systems Lab — Pytorch, Python, Docker, Kubernetes April 2025 - Present
Undergraduate Research Assistant Santa Cruz, CA

- Contributing to a novel 3D reconstruction pipeline leveraging **3D Gaussian Splatting** on **ARIA smart glasses** video data to recreate human-scale environments for AR navigation and interaction.
- Designed and implemented an initial pipeline using COLMAP; currently developing a custom alternative to bypass COLMAP preprocessing for **significantly faster reconstruction**.
- Benchmarking and integrating **sparse-view optimization methods** to enhance reconstruction speed and accuracy for real-time AR/VR applications.

Biomed-AI Lab — Pytorch, Python, Docker, Kubernetes January 2024 - Present
Undergraduate Research Assistant Santa Cruz, CA

- Currently contributing to a 3D Computed Tomography reconstruction pipeline using Gaussian Splatting and **visual signal processing**, with plans to benchmark sparse-view methods for **efficient high-fidelity reconstruction** of brain scans.
- Collaborated on **medical imaging research** focused on 3D brain tissue concentration mapping using MRI data and the NextBrain dataset, supporting modifications to the BMapEst simulation pipeline.
- **Deployed and containerized** Freesurfer-based image processing tools in **Docker containers** across a Kubernetes cluster to enable large-scale neuroimaging experiments.

SKILLS

Languages: Python, C++, Matlab, Typescript, C, JavaScript, Rust

Libraries/Frameworks: Pytorch, Pytorch Lightning, ONNX, OpenGL, WebGL, Angular18, Three.js

Tools: Kubeflow, MLflow (Databricks), Docker, Kubernetes, CI/CD, Bash Scripting, Valgrind

PROJECTS

Motion Gesture Sign Language Translator

- Developing an end-to-end MLOps model for Sign Language *motion* gesture recognition, fine-tuning **VideoMAE** on the **ASL Citizen dataset**.
- Using Pytorch, Pytorch Lightning, and Huggingface transformers
- Leveraging **Kubernetes** for training, **Kubeflow** for distributed training, and **MLFlow** for model management.
- Automated building of inference containers using **ONNX** via **GitHub Actions**

Audio-based Playlist Generator — Built a PyTorch-based ML model to generate Spotify playlists from a single MP3 using **Fourier transformed** audio waveforms and song metadata. Trained on **30,000** songs and **won Spring 2023 SC AI is No Limit competition for music-based generative modeling**.

Distributed KV-Store — Engineered a sharded, distributed key-value store in **Go**, implementing causal/eventual consistency, **fault tolerance**, and partition-resilience via **REST API** and **Docker** for high **scalability** and data **availability**.