ABHAY SHUKLA

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EXPERIENCE

Stanford Biomedical Informatics Research Center Nov 2024 – Present
Gevaert Lab Student Researcher *San Jose, CA*

- Developed computer vision models (CNNs, ViTs) to generate anatomically-plausible synthetic medical images indistinguishable to clinicians (0.5 AUC).
- Designed scalable high-throughput Python data pipeline, reducing communication overhead for distributed training on 1.5TB of biomedical images.

UCLA COSMOS (Neurobiology + AI Cohort) Jul 2024 – Aug 2024
Student Researcher *San Jose, CA*

- Investigated neurobiological parallels to machine learning, implementing MLPs to simulate rodent navigational behaviors only using low-level libraries (NumPy).
- Developed UCLA campus image geolocation models, organizing campus-wide video data collection efforts and using 1,500+ curated images to fine tune AlexNet.

FRC Team 604: Quixilver Robotics Jun 2022 – Present
Controls Lead, Software Maintainer *San Jose, CA*

- Implemented real-time localization and piece detection computer vision systems for three large-scale, 125lb competition robots, securing 24 awards+event wins.
- Designed several robot components, applying advanced techniques in strategic design and additive manufacturing (TPU, PETG, PLA 3D printing).

PROJECTS

Voquel - *Demo Page* Jan 2025 – Aug 2025

- Researched a novel audio translation pipeline using multimodal LLMs & prosodic feature mapping to preserve vocal character and artistic intent.
- Attracted 1M+ organic views by using AI-powered workflows to find trending topics, produce translated topics, and upload with proper author attribution.

PercGAN - *GitHub Repo* Sep 2024 – Mar 2025

- Developed a GAN for high-fidelity stereo percussion generation, improving audio quality 85% and reducing training time 25× compared to baseline models.

EDUCATION

Leland High School *4.00 UW A-G*
Junior (Expected Graduation 2026) *San Jose, CA*

SKILLS

Technical	Python, PyTorch, Computer Vision, Generative Audio Models, Distributed Training Pipelines
Other	Growth Experimentation, Product Analytics, Community Leadership, Content Strategy

HONORS & AWARDS

- 2025 Santa Clara Synopsys Science & Engineering Fair: Honorable Mention (Top 10%, 1000+ Participants) Apr 2025
- West Coast Products: Robot Design Challenge Finalist (Top 1%, 1000+ participants) Nov 2024
- FIRST World Championship (with FRC604): Milstein Division Winner (5/3500 Internationally) Apr 2024