

Jack Pham

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EDUCATION

University of California at Berkeley

Bachelor of Science in Electrical Engineer and Computer Science

Berkeley, CA

August 2025 – December 2027

Cypress College

Associate degree to Transfer in Mathematics and Physics, GPA: 3.94

Cypress, CA

February 2023 – May 2025

SKILLS

Programming & Software: Python, C++, MATLAB, Git, Bash, Linux, VS Code, Jupyter

Robotics & Electrical Engineering: ROS, Arduino, ESP32, Gazebo, circuit design, PCB layout, soldering, sensors and actuation, signal processing fundamentals

RESEARCH EXPERIENCE

Texas Advanced Computing Center (TACC), UT Austin

Summer Researcher

Austin, TX

June 2024 – August 2024

- Developed a multi-robot task allocation and path-planning framework using cvxpy and ROS, improving simulated disaster-response efficiency by 70 percent.
- Designed, simulated, and validated multi-agent coordination in Gazebo; leveraged TACC's supercomputing cluster to accelerate optimization for large-scale robotic systems.
- Implemented performance benchmarking that reduced computation time for planning cycles by 45 percent.

WORK EXPERIENCE

North Orange County Community College District

Physics Tutor

Cypress, CA

February 2025 – July 2025

- Tutored students in mechanics, electromagnetism, and thermodynamics, leading to an average 20 percent improvement in exam performance.
- Created customized study plans and targeted practice sets to reinforce conceptual mastery and long-term retention.

Charger Experience at Cypress College

Student Ambassador

Cypress, CA

January 2024 – December 2024

- Processed and resolved 75+ student cases per semester by coordinating with admissions and student services, reducing processing time by 30 percent.
- Represented the college at 12 outreach events, engaging 500+ prospective students and contributing to a 12 percent rise in campus visit sign-ups.
- Organized and conducted 9 campus tours and 8 welcome sessions for groups of up to 120 attendees.

PROJECTS

Acoustic Positioning System | Python, Signal Processing, EECS 16A

UC Berkeley

Fall 2025

- Implemented a full 2D acoustic positioning pipeline that localizes a microphone using repeated beacon signals from multiple speakers.
- Wrote Python functions for periodic cross-correlation, peak detection, noise averaging, and least-squares multilaterate to recover position from time-difference-of-arrival data.
- Validated the system on both simulated and real microphone recordings, accurately estimating the receiver's location under realistic noise.

Voice Recognition | Python, NumPy, SciPy, EECS 16A

UC Berkeley

Fall 2025

- Built a speaker-dependent voice command classifier that converts speech into spectrogram/Mel-spectrogram features and reduces them with PCA via SVD.
- Engineered a nearest-centroid classifier in PCA space to separate multiple spoken words, integrating alignment, normalization, feature extraction, and projection into one pipeline.
- Achieved around 97% classification accuracy on held-out and real-time microphone recordings by tuning preprocessing and PCA dimension choices.

CONFERENCE AND PRESENTATIONS

- **SCCUR (Southern California Conferences for Undergraduate Research)**

San Bernardino, CA

November 2024

- **STARS Celebration Conference**

San Diego, CA

September 2024