

ALEX GARDINER Portfolio | alexandergardiner.com
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EDUCATION:

UC Davis | September 2025 - June 2029

Bachelor of Science in Computer Science and Engineering

Relevant Coursework | ECS 036A: Programming and Problem Solving

UCLA COSMOS: AI for Speech and Imagery | July 2024

Intensive summer program | 6 hours/day of lectures and labs with Professors Alwan & Kadambi

Dos Pueblos High School | GPA: 4.75 / 5 | Graduated 2025

SKILLS:

Languages: Typescript/JavaScript, Python, Java, C, C++

Frameworks & Libraries: Next.js, React, PyTorch, TensorFlow, Hugging Face, Tailwind CSS

AI/ML: Neural Networks, Computer Vision (YOLO), Dataset Augmentation, Feature Embeddings

Tools & Platforms: Git, MongoDB, Linux, AWS

RELEVANT EXPERIENCE:

First Robotics Team

Vice President / Software Lead | August 2022 - June 2025

- Founded and structured the robotics software team, designing the robot code framework annually. Led a team of 10 engineers to implement autonomous trajectory following, AI object detection (YOLO), and precise automatic alignment using AprilTags and finely tuned PID.
- Elevated team ranking from **43rd to 10th out of 300 in California** within one year through strategic coding and training initiatives.
- Mentored 15 members/year, creating lessons to guide members to Java and robotics proficiency.
- Awards: World Championships Qualifier, Rookie All Star (Year 1), Rising All Star (Year 3)

Coding Club

President / Founder | August 2022 - June 2025

- Grew Coding Club from 5 to 15 members through weekly technical meetings.
- **Secured 1st place** in the high school category of the UCSB International CTF Hacking Competition, personally locating and exploiting the winning directory traversal vulnerability.

RELEVANT PROJECTS:

IEEE ITAIC 2025 Published Research Paper | [Link to Paper](#)

Child vs. Adult Speech Classification with Deep Learning | July 2024 - Apr 2025

- Achieved **93.5% accuracy** via cross validation.
- Unified 6 large-scale datasets, including 2 private datasets provided by UCLA's Speech and Auditory Processing Lab to create a comprehensive training corpus.
- Implemented data augmentation with impulse response convolution to mitigate significant recording artifacts that prevented the model's learning.
- Utilized HuBERT, Whisper, and ECAPA-TDNN to extract robust feature embeddings.
- Optimized and tested neural networks, logistic regression, XGBoost, and transformer models.

Full-Stack Recipe Generation Platform | [Link to Demo](#)

Privacy Focused Web App with Social Features | 2024 - 2025

- Developed Next.js web app using **client-side YOLO detection** to identify ingredients locally, sending detected items to the ChatGPT API for recipe generation.
- Integrated Google OAuth authentication and MongoDB for secure user data and recipe storage.
- Built social features including recipe sharing, commenting, feedback forums, and privacy controls for public/private recipes.

Dataset Augmentation of Classical Music

AI for Music Genre Classification at UCLA COSMOS | July 2024 - August 2024

- Enhanced a public dataset through impulse response convolution to simulate diverse recording environments and improve model generalization
- Created multiple AI models with TensorFlow to classify music genres in a real world context, resulting in a **34% accuracy improvement** over the raw dataset.