

Akhil Kalakota

<https://www.linkedin.com/in/akhil-kalakota-5b1a70260> | <https://github.com/AKalakota23> | akhilkalakota@gmail.com | 805-630-4046

SKILLS

- **Technical Skills:** Python, Javascript, HTML, CSS, Git, C++, PSPICE, SQL, Linux, System Verilog, IOT, Embedded Systems
- **Technologies:** Microsoft Office, VS Code, Microsoft SQL server, OpenCV, Questa, AWS, Raspberry Pi, Matlab

EDUCATION

University of California, San Diego

La Jolla, CA | June 2025

- B.S. in **Computer Engineering**
- **Relevant Coursework:** Circuit Analysis, Signals and Systems, Data Structures/Algorithms, Computer Architecture/Digital Logic

Moorpark College

Moorpark, CA | May 2023

- AS-T in **Computer Science** - GPA: 3.83 (Dean's List)
- **Relevant Coursework:** Data Science, Python, Computer Architecture, Electrical Engineering Fundamentals, C++, Data Structures and Algorithms, Discrete Structures, Differential Equations, Linear Algebra,

WORK EXPERIENCE

Texas A&M University

College Station, TX

Applied Computational Robotics Researcher

June 2023 - August 2023

- Researched the application of **Reinforcement Learning (RL)** techniques for enhancing **autonomous cars** within a coordinate-based framework
- Conducted comprehensive evaluations of traditional and novel reward functions, assessing their **effectiveness in guiding RL algorithms for improved vehicle performance such as completing a race track**
- **Presented findings** at the Summer Research Symposium at Texas A&M to established professors and PhD students

CodeDay

Remote Internship

Software Engineer Intern

January 2023 - February 2023

- Made an open source contribution to FreeCodeCamp, a project with over **350K+** users that aims to enable people to learn coding for free
- Added a profile page where teachers can create and edit their information using **Next.js** and **localStorage API** to store user data as a JSON object

PROJECTS

Smart Watch | *Personal Project*

| Fall 2024

- Designed and built **Bluetooth-enabled smart watch** using an **ESP32 microcontroller**, integrating an OLED display for real-time notifications from iPhone via **BLE communication**.
- Configured **Apple Notification Center Service (ANCS)** on ESP32 to relay iOS notifications directly to the glasses' display, leveraging BLE characteristics and custom callback functions.
- Utilized U8g2 library to customize OLED display output, addressing issues with screen mirroring and orientation for optimal readability.

Rodent Recon | *Personal Project (Ongoing)*

| Summer 2024

- Built a **security system** using a **Raspberry Pi Zero 2 W** and **camera v2**, trained with machine learning models to detect squirrels in my backyard.
- Developed an automated mechanism that triggers a high pitched noise to scare away squirrels when detected
- Engineered a wireless communication system between the camera, sensor, receiver, and speaker

IEE HardHack Hackathon | *UCSD IEEE Hardware Hackathon*

| Spring 2024

- **Arduino microcontroller** project enhancing deaf people's situational awareness during nighttime navigation made in under 24 hours.
- Utilized **ultrasonic sensor** and **camera** to record video when people get close for security and safety.
- Used **SpeechRecognition** to transcribe audio to text, write to LCD, run **sentiment analysis**, and light LED's depending on connotation.

Reinforcement Learning for Self Driving Car | *Texas A&M: Applied Computational Robotics*

| Summer 2023

- Helped design and develop an **autonomous robot** utilizing the **Soft-Actor-Critic (SAC) algorithm** within its **Reinforcement Learning framework** with PhD students in a lab
- Employed the distance to the centerline of the track as a **reward signal** to train the robot's ability to **stay on track and navigate complex environments**
- Leveraged **Virtual Reality** technology for **real-time position and orientation tracking**, as well as boundary mapping