

# Vin Shin

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## Education

**University of California, Santa Barbara** BS in Electrical Engineering June 2028

- **GPA:** 4.0/4.0
- **Awards:** Dean's list (3.75+ GPA), ECE5 Best Software Project

## Experience

**Sensors - Electronics**, UCSB Gaucho Racing – Santa Barbara, CA Sept 2024 – June 2025

- Designed and manufactured sensor network that records and transmits data metrics within GR25, Gaucho Racing's 2025 electric car for the Formula SAE Electric competition.
- Designed unique sensor PCBs using various ICs (VL53L0X, BMI323, TE 4525DO), STM32, and CAN transceivers to enable CAN-based data network.
- Designed ingress-protected enclosures for sensor modules and main data acquisition system through Solidworks, 3D Printing, laser-cutting, and threaded inserts.

**Systems Operator**, UCSB Collaborate IT – Santa Barbara, CA Mar 2025 - Present

- PC building, repair, hardware troubleshooting, Windows/Mac imaging + software management via MDM
- Audio & visual equipment setup and troubleshooting, monitoring help ticketing system

**Engineering Intern**, Arcadia Tractor Corporation – San Jose, CA Nov 2022 – Jan 2024

- Improved golf-ball collection by designing and constructing a compact hopper with Fusion360 and power-tools.
- Developed an automatic recharging circuit independent of tractor communication. Used KiCAD, Atmega microcontroller, and a relay based linear actuator.
- Prototyped ball-deflectors for the front bumper of vehicle, reducing amount of crushed golf-balls.
- Monitored data metrics of prototype tractor through ROS, Python, and Excel.

## Projects

**ROS Rover**, Pleasanton, CA June 2024

- Designed a multipurpose rover with Raspberry Pi, Dynamixel motors, 2D Lidar module, and ROS.
- Implemented map scanning and localization through SLAM, ensuring optimal traversal.
- Designed and manufactured a chassis with body parts with 3D printed parts and aluminum extrusions.

**RFID Scanner**, Nize Systems, Pleasanton, CA Jan 2024

- Designed a PCB (KiCAD) that binds an Arduino Nano, RC522 module, and RGB LED headers for an ID scanner.
- Programmed firmware that passes RFID data through USB. Designed a 3D-printed enclosure with Fusion360.

**Remote Shopping Cart**, Pleasanton, CA Feb 2023

- Designed and constructed a remote shopping cart capable of moving at 25 mph, with up to 300 pounds of load.
- Used brushless hub motors with hall effects, RC controller, STM32, and a motor controller for the drivetrain.

## Activities

**Electronics Member**, UCSB FSAE Gaucho Racing – Santa Barbara, CA Sep 2024 – Present

**Member**, IEEE – Santa Barbara, CA Sep 2024 – Present

## Technical Skills

**Skills:** PCB Layout (Fusion, KiCAD), CAD (Solidworks, Inventor), Soldering, 3D Printing, Laser Cutting

**Languages:** C++, C, MATLAB, Python,  $\LaTeX$

**Coursework:** Fundamentals of Logic Design, C++ Programming, Classical Mechanics, General Chemistry, Vector Calculus, Linear Algebra, Differential Equations

## Additional

**Interests:** Semiconductors / Integrated Circuits, Robotics, Autonomous Systems, Embedded Systems, AI