

Michael Mauricio-Lee

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EDUCATION

University of San Diego — Shiley-Marcos School of Engineering

Expected Graduation: May 2029

B.S. in Biomedical Engineering | GPA: 3.9 / 4.0

EXPERIENCE

Engineering Research Intern — Shiley-Marcos School of Engineering

Summer 2026

University of San Diego • San Diego, CA

- Designed and built “Ripple,” an interactive sensor-driven light installation: custom PCB integrating an ESP32-C6 microcontroller with an ADXL345 accelerometer over I2C
- Wrote C++ firmware implementing sensor self-calibration, threshold-based impact detection, real-time control of a 144-LED strip, and live motion-data streaming over Wi-Fi (OSC/UDP) to TouchDesigner
- Modeled the enclosure in Fusion 360, fabricated the housing, and authored complete build documentation (BOM, wiring, firmware, bring-up procedure)

Multimedia Freelancer — MBeauty Clinic by Dr. Tess

May 2026 – Present

- Photograph and film Time Machine Academy, the clinic's medical-education seminars with live clinical demonstrations for international visiting physicians
- Shot promotional media for brand launches (XTRESSE pop-ups at UTC) and clinical content at a UCSD dermatology event attended by 80 visiting students
- Built a scripted batch color-grading pipeline (S-Log3 → Rec.709) for event footage delivery

Camp Counselor — Level Up, San Diego Air & Space Museum

July 2025

- Led science-focused activities for 60 elementary-aged campers (grades 1–5) from underserved communities

ENGINEERING PROJECTS

Racing Simulator with Custom Wireless Steering Wheel

2025 – 2026

- Designed and built a racing simulator from scratch: wooden chassis integrating a racing seat, pedal assembly, and a wheelbase built around a hoverboard motor
- Designed and 3D-printed a Formula-style steering wheel that operates as a standalone wireless controller — pushbuttons, rotary encoders, and shifter paddles read by an onboard microcontroller — mounted on a quick-release hub

Motorized Crane — Course Project

2025

- Built a fully functional motorized crane from an Arduino kit: programmed motor control for boom lift and rotation, with a 3D-printed base and a laser-cut wooden structure

Electric Guitar and Amp

2026

- Built an electric guitar completely from scratch: shaped the body and neck from rough lumber, cut and leveled the frets, and wired the pickups and controls
- Built the matching hardwood speaker cabinet with hand-planed boards and hand-cut dovetail corners

HONORS & AWARDS

Scholarship: University of San Diego Trustee Merit Scholarship, 2024–2028

Science Olympiad 2023–2024: 2nd Place, Robot Tour and 6th Place, Scrambler — SoCal State Competition

High School: Honor Chain Recipient (top 30 of graduating class) | AP Scholar with Distinction

SKILLS

Programming: Python (data analysis), C/C++ (embedded, Arduino/PlatformIO), PowerShell

Hardware & Instrumentation: Microcontrollers (ESP32, Arduino), I2C/serial/wireless interfaces, PCB assembly, soldering, data acquisition

Fabrication & Tools: Fusion 360 (CAD), 3D printing, woodworking, Excel, photo/video color grading