Zack Gald

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SUMMARY

Robotics and Electrical Engineering student graduating May 2026 with hands-on experience in embedded systems, motor control, and mechatronic product development. Project work includes hardware-software integration, PCB design, and autonomous robotics. Seeking full-time Engineering roles in defense, robotics, or other engineering industries

EDUCATION

B.S.E., Robotic Engineering; Graduating May 2026
Arizona State University, Mesa, AZ
Relevant Coursework: Statistic and Dynamics, Engineering Design, Mechanics and Materials, Electrical Systems, Robotics I & II, Engineering Project

TECHNICAL SKILLS AND CERTIFICATIONS

Design and Modeling Tools: SOLIDWORKS, MATLAB, Microsoft Office, AutoCAD, GitHub
Programming: Python, C, C++
Microcontroller Programmer: Arduino, Raspberry Pi, ESP32, PIC, MP-Lab

PROFESSIONAL EXPERIENCE

NMG Aerospace, Tempe, AZ: Quality Engineering Co-Op June 2025 – Present
● Created and standardized quality checklists used site-wide for inspecting packboards, gauges, regulators, and military-grade aerospace components
● Updated and maintained Excel-based databases to track quality metrics and improvement actions across departments
● Conducted internal audits to verify adherence to documented quality processes and contributed to the development of control plans

Parker Hannifin Corporation, Irvine, CA: Engineering Tech – Aerospace Division Nov 2021 – Aug 2022
● Supported test fixture design and validation for hydraulic and pneumatic aerospace components
● Conducted failure mode effects analysis (FMEA) and root cause investigations to improve component reliability
● Documented and optimized assembly and test procedures

PROJECTS

Project 2: String Machine, Pitch Visualization for k- 8 Spring 2025
Collaborated in a team of three to develop an education device that converts microphone input into visible string vibrations:

- Designed and assembled a custom PCB with PIC18 microcontroller and TMC5072 motor driver (Allegro, MPLAB X)
- Implemented UART/SPI communication protocol for real time motor control based on voice pitch input
- Integrated OLED display and microphone input system to visualize pitch feedback and waveform accuracy

Project 1: Autonomous Bike Signal Lights with Motion Detection Fall 2024
Designed a microcontroller-based safety system that activates directional LEDs based on rider movement:

- Programmed accelerometer logic to detect left/right leans and deceleration for automatic turn and brake signals (Micro Python, UART)
- Developed and tested custom LED signaling patterns for visibility during night riding (12V circuit, PWM control)
- Mounted prototype on rear bike frame and evaluated performance during outdoor test rides

ACTIVITIES

Boy Scouts of America – Eagle Scout Awarded May 2017
Demonstrated leadership, service, and long-term commitment through scouting program (12+ years)

- Led Eagle Scout Service Project: designed and built a permanent wooden bench for a local church, coordination 5 volunteers over 100+ hours
- Served in leadership roles including Senior Patrol Leader and Troop Guide, mentoring younger scouts
- Planned and led camping trips with emphasis on outdoor skills, safety, and team development

Mission Viejo High School Varsity Basketball Captain 2017-2019
Led and motivated a team of 12 athletes on and off the court, fostering a culture of discipline, teamwork, and accountability