Portfolio QR

Danh Tran

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CAREER PROFILE

Electromechanical engineering student aspiring to specialize in mechatronics. Experienced in hands-on projects integrating mechanical, electrical, and software systems. Strong leadership background in team-based engineering and technical problem-solving. Seeking an engineering internship to apply skills in circuit design, prototyping, and embedded systems.

EDUCATION

California State Polytechnic University, Pomona, Pomona, CA — August 2025 - December 2027
Electromechanical Systems Engineer B.S. Sophomore

- GPA: 4.0/4.0
- Planned Coursework: Electrical Networks, Instrumentation & Control, Robotics Control & Applications, Applied Statics & Dynamics, Strength of Materials, Machine Elements, Thermodynamics, Fluid Mechanics, Manufacturing Systems, C/C++ Programming, Mechatronics, Calculus III, Linear Algebra & Differential Equations

PROJECTS

Go-Kart Engineering Project | *Physics/Mechanics, Wiring, Altium PCB Design, Team Leadership* — August 2024 - July 2025
Team Leader

- Engineered a go-kart from a repurposed bed frame; reached 15 mph in testing
- Managed ~$1.2k budget and 3-member team for design, fabrication, and testing
- Applied torque/friction analysis, drivetrain troubleshooting, and electrical wiring

Pickleball Launcher Project | *Raspberry Pi, Circuits, Python, 3D Printing, Motor Control* — February 2025 - Present
Engineering Intern (informal)

- Designed a capstan-driven launcher for precision motor control, guided by a professional engineer
- Integrated H-bridge motor driver and BLE-enabled ESP32 for motion calibration via phone
- Combined 3D-printed components with electronics for testing and iterative mechanical refinement
- Planned to co-author a research paper on capstan vs. gear drive efficiency for ASME submission

RFID-Jukebox | *Raspberry Pi, Python, GPIO Wiring, Embedded Systems* — February 2025 - Present
Solo Developer

- Built a functioning jukebox with custom Arduino circuitry and RFID song selection
- Designed a spring-loaded push-push mechanism in SolidWorks; integrated with GPIO control
- 3D printed discs and housing for full mechanical and aesthetic design
- Applied embedded systems programming to merge physical interaction with digital sound

EXPERIENCE

Teaching | *Tutoring, Lesson Planning, Communication, Curriculum Design* — August 2021 - May 2025
Co-Teacher, Tutor, Teacher Assistant — Westminster & Santa Ana, CA

- Tutored ~8 middle school students daily; supported ~80 students over 4 years
- Co-taught digital design for nuns in Vietnam, bridging English/Vietnamese communication
- Led confirmation classes and retreats for 20+ high school students

CyberPatriot | *Linux, Bash Scripting, Networking, Cybersecurity, Leadership* — September 2023 - Present
Coach — Westminster, CA

- Mentored 9 teams (~54 students) national CyberPatriot competition
- Scripted ~2k lines of Bash for Linux hardening and security automation
- Coached teams to Top 100 National Platinum Tier (twice) and grew placements by 200%

SKILLS

Engineering Tools: *PCB Design (Altium), 3D Printing, SolidWorks CAD, Raspberry Pi, Arduino*
Programming: *Python, Bash, C++, Java, HTML/CSS, JavaScript, OpenGL, Git/GitHub*
Certifications: *Virtual Intern Simulation @ Johnson & Johnson Medtech, State Seal of Civic Engagement, Seal of Biliteracy, Computer Science & Cyber Security CTE Pathway*