Rick Unite

Electrical Computer Engineering student eager to contribute and grow through internship roles

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EDUCATION

California State Polytechnic University, Pomona **Aug '22 - (Expected) Jun '26**

- **Major:** B.S Electrical Computer Engineering

- **Programming Coursework:** Object Oriented Programming, Digital Logic Design Verilog, Data Structures and Algorithms
- **ECE Coursework:** Electrical Circuit Analysis, Microelectronic Circuits, Control Systems Engineering, Signals and Systems, Illumination.

RELEVANT COURSEWORK

ECE 2300 Digital Logic Design & Lab | ECE 3300 Digital Circuit Design & Lab

- Designed and implemented a Doodle Jump‑style game on a Nexus A7 100T FPGA using Verilog in Vivado.
- Developed a digital audio module to generate game sound effects, driven by a programmable clock divider.

ECE 3301 Intro to Microcontrollers & Lab

- Programmed PIC18F4620 microcontrollers in C and Assembly using MPLAB X IDE.
- Interpreted schematics and designed a pedestrian stoplight system: implemented timed control for red, yellow, and green LEDs based on push‑button input.

ECE 3310 Data Structures & Algorithms

- Implemented and analyzed core data structures (binary trees, graphs, hash tables) in C++.
- Assessed time‑ and space‑complexity (Big O notation) for sorting and searching routines.

ECE 3709 Control Systems Engineering & Lab

- Modeled and simulated linear control systems in MATLAB/Simulink, including first‑ and second‑order plant dynamics.
- Applied Laplace‑transform methods to derive transfer functions and evaluate steady‑state error for standard input signals.

PERSONAL PROJECTS & EXTRACURRICULARS

Magic Mirror (Smart Mirror) **Dec' 21**

- Utilized Raspberry Pi as the main computer to implement a repository from GitHub designed by an expansive community
- Bought 4 wooden planks from Home Depot and 2-way glass from Amazon to construct the main body of the mirror
- Stripped apart a monitor to its bare parts of the LCD screen and internal components to display the Raspberry Pi
- Utilized Raspbian, GitHub, Linux, and VNC Viewer and created modules to display news, current time, and weather

WDI Imagination Disney Imagineering Competition **Nov' 24**

- Team Lead and 3D Modeler on our Disney Imagineering Competition Project with a team of 3 people
- Organized weekly meetings, deadlines to ensure that we were on top of our schedule
- Utilized Blender (3D Modeling Software) to construct a train to demonstrate our process to better the public transport system of LA

Sensor Fusion for Autonomous Vehicles **Aug'24 – Jan'25**

- Designed and implemented a real-time obstacle-detection pipeline on a Raspberry Pi 4 using Python and OpenCV, capturing and processing camera frames at ~15 FPS.
- Configured the Raspbian OS environment and set up VNC Viewer for headless operation, enabling remote debugging and system monitoring.

ADDITIONAL EXPERIENCE

Computer Systems Administrator **MARATHON PETROLEUM COMPANY** **Oct '23 – May '25**

- Collaborated with a 6-person team to roll out a new refinery-wide intranet that reduced page-load times by 40% for 150+ operators.
- Imported/exported SharePoint data into Excel to build Power BI dashboards-streamlined weekly safety-report generation
- Inspected and updated hundreds of operational forms, catching critical errors and ensuring compliance with safety rules

TECHNICAL SKILLS

- **Software:** C, C++, C# Raspbian, Python, Linux, MATLAB, Java, HTML/CSS, MPLAB, Blender, Fusion 360, Microsoft Tools, Unity, AutoCAD, Solidworks
- **Hardware:** Electrical Circuit Design, Constructing Circuits, Raspberry Pi, FPGA Nexus A7 100T, Microcontroller PIC18F4620, Soldering