Owen Wells

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(909) 203-9448

Education

University of California Los Angeles
Mechanical Engineering, B.S. - GPA: 3.7 Aug 2025 - Jun 2027

Mt. San Antonio College
Associate's of Science Transfer Mechanical Engineering & Mathematics - GPA: 4.0 Jul 2022 - Jun 2025

Technical Skills

CAD: SolidWorks, Fusion, Autocad, Onshape, SolidWorks Assembly, CAM
Analysis: Ansys Mechanical FEA, Structural Analysis, Simulink
Manufacturing: Lathe and Mill, Drill Press, GD&T, 3D printing, Prototyping, Heat Treatment
Electronics: Arduino, Raspberry Pi, Wiring Schematics, Soldering, Electronic Circuits
Programming: MATLAB, Python, C++, Microsoft Office, Excel

Projects

Carbon Fiber A-Arms, Bruin Formula Racing Oct 2025 – Present

- Designed and optimized carbon-fiber suspension A-arms under 4 load cases using FEA in ANSYS Mechanical. The acceleration load case produced the largest maximum bearing stress of 5820 psi.
- Reduced component mass relative to aluminum by evaluating uni-directional laminate properties and failure criteria.
- Modeled weld tab jigs and chassis interfaces, producing manufacturing drawings using ANSI & GD&T standards.
- Supported suspension design leads during manufacturing phase, learning manual machining and CNC laser cutting.

Electronics & CAD Lead, Spy Watch, 2025 UCLA Engineering HACK Competition Jul - Aug 2025

- Programmed a Raspberry Pi Pico to acquire sensor data, transmit to a web interface, and display feedback via LCD.
- Designed compact enclosure geometry to optimize component layout, sensor accessibility, and structural integrity.
- Designed and integrated a DC voltage regulator circuit to step 3.7V Lithium ion battery output to regulated 5V, ensuring reliable ESP32 CAM operation under Wifi current spikes.

Heat Treatment Lead, Knife Fabrication

- Developed and documented a multi-step heat treatment procedure for AISI 5160 steel, including normalization, subcritical heating, austenitizing, oil quenching, and double tempering to balance hardness and toughness.
- Applied iron carbon phase diagram analysis to justify temperature selection and heat treatment sequencing for martensitic transformation. The process yielded a hardness value of 57 HRC, and a max bending force of 22.4 KN.
- Performed mechanical testing and performance evaluation, including tensile and bending using an Instron universal testing machine, hardness, and cutting tests, and analyzed results relative to design intent.

Water Level Indicator & Regulator Breadboard Project Oct 2024 - Dec 2024

- Designed and built a breadboard-based monitoring and control circuit to detect three discrete water levels with float switches, and three temperature ranges, driving LED indicators and an automated drain pump.
- Implemented a Wheatstone bridge with thermistor to normalize voltage at room temperature, followed by a difference amplifier (2 V/V) and comparator network to trigger temperature LEDs at defined thresholds.
- Designed a pump shutoff delay circuit using an RC time constant and NPN power transistor, enabling controlled drainage below the maximum fill level for 10 s, based on the calculated flow rate of the pump being 30 mL/s.
- Documented full design rationale, schematics, testing results, and BOM in an IEEE-formatted technical report (LaTeX).

Experience

Embedded Tutor / Drop In Tutor, Mt. SAC ASAC - Walnut, CA Aug 2024 - Jun 2025

- Demonstrated exceptional level of knowledge of material by tutoring all levels of physics offered on campus, various engineering courses, and math up to calculus III.
- Inspired students by actively discovering their strengths to successfully guide them through the course.
- Curated an environment where students were encouraged and felt comfortable to try and fail in order to learn.
- Led group tutoring sessions by facilitating different activities for students to remain engaged and collaborative.

Activities

Bruin Formula Racing: Suspension team; currently working on carbon fiber A-arms and manufacturing.
UCLA Powerlifting: Applying my knowledge in biomechanics and leverages to help new members learn technique.