Jonathan K. Wong

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EDUCATION

B.S. Mechanical Engineering, University of California, Los Angeles (GPA: 3.83, Cum Laude) *June 2020*
M.S. Mechanical Engineering, University of California, Los Angeles *Expected Graduation: June 2021*

PROFESSIONAL EXPERIENCE

SpaceX-Component Test Engineering Intern *June 2019-September 2019*
- Ran, maintained, and improved an automated test cart and test procedures for in flight crew capsule environmental control actuators, used National Instruments DAQ systems and Watlow temperature controllers
- Updated test cart temperature control solenoids and performed overshoot and stability analysis to validate test cart performance
- Performed environmental functional tests and data analysis/review to validate actuator units for flight, extensive MATLAB use
- Owned actuator units from reception from vendor through acceptance testing to integration with upper assemblies
- Resolved all vendor caused component nonconformances and dispositioned underperforming units with data driven rationales
- Generated yield and production statistics to inform hundreds of thousands of dollars' worth of vendor purchase orders
- Pushed process improvements to make acceptance testing more technician friendly and reliable thus requiring less engineering support, gained experience with software controlled electromechanical devices and data acquisition systems

SpaceX-Component Engineering Intern *June 2018-September 2018*
- Owned and oversaw the in-house production cycle of three precision flight valve assemblies starting from vendor piece part inspections, to in house assembly, and finally proof and acceptance testing
- Managed daily vendor piece part rejections and in-house technician assembly issues and gave detailed dispositions with rationales to support production and met all production quotas and deliverables
- Liaison between design engineers, quality engineers/inspectors, technicians, and vendor representatives
- Updated engineering masters to push process improvements and decrease valve assembly time by 25%
- Worked to improve valve acceptance test accuracy and efficiency by developing a more flight-like functional test setup and implementing automated test data review to remove the need for in person engineering data review

Automotive Specialists -Automobile Repair Technician *July 2016-September 2016*
- Performed repair and maintenance work on customer automobiles, learned about service life and failure modes
- Repaired brakes, suspension shocks and struts, motor mounts and axles, as well as performed routine automobile services and tune ups (oil, spark plugs, air filters, tires)

UC Berkeley Civil Engineering Department -Research Assistant *June 2014*
- Assisted R&D Engineers and Graduate Students in setting up test specimens and rigging sensors such as strain gauges and displacement markers, developed miniature shake table training materials for recording free vibration data from demonstration models

PROJECTS

Senior ME Capstone Design Project *September 2019-Present*
-Principal Mechanical Design Lead
- Principal mechanical designer of fully autonomous walking robot with end effector for wood cube manipulation
- In charge of designing and analyzing all custom hardware components (walking & cube manipulator mechanisms, electronics mounting), worked closely with manufacturing and mechatronics leads to ensure project feasibility and design coherence
- Designed robot to meet the project's strict budget and performance requirements, placed second overall in the competition

UCLA Formula SAE Racing Team *September 2016-Present*
-Pneumatic Shifting R&D Lead (June 2019 to Present)
- Designing, developing, and validating an electronically controlled semi-automatic pneumatic shifting system to improve race car performance and reliability, designing and sourcing of all mechanical and electrical components

-Principal Technical Director (June 2018 to June 2019)
- Head of 50 member team, with 12 direct reporting subsystem leads, set the design and performance goals for the team and managed the entire build process from conception to design, through manufacturing, and finally testing and tuning
- Tasked with advising and problem solving with subsystem leads to create optimal design solutions through in-depth load case analysis followed by FEA and topology simulations, also focused on integration between subsystems, was able to reduce total car weight by 7.5%
- Reviewed and signed off on final designs before manufacturing and ensured the manufacturing process ran efficiently and on schedule by managing in-house and sponsor manufacturing resources
- Led team to complete car with a full 7 weeks of testing/tuning time, team competed for the first time in all static and dynamic events

-Controls and Driver Interface Lead (June 2017- June 2018)
- Managed team of five to design, build, and install all driver safety and input elements including braking and shifting systems, seat, pedal box, firewalls, anti-intrusion plates/impact attenuator, and driver protection panels, extensive use of MATLAB and FEA analysis
- Reduced total subsystem weight by 15%, while decreasing subsystem manufacturing time by 20%

TECHNICAL SKILLS

- Proficient in SolidWorks, FEA Methods, MATLAB, Siemens NX, CATIA, AutoCAD, ABAQUS, AutoDesk Inventor, LabView based GUI systems, Adobe Photoshop and Lightroom, MS Word, MS PowerPoint, MS Excel; hand and machine shop tools
- Working knowledge of C++, Solid CAM, ANSYS Static Structural, NI Veristand, Watlow Temperature Control, CNC and Water Jet Machining, Laser engraving/cutting, 3D Printing Methods

AWARDS and PERSONAL PROJECTS

- 3x UCLA Irwin and Joanne Schwartz Endowed Scholarship for Mechanical and Aerospace Engineering Award
- Includes 3D Printer, Sous Vide Immersion Circulator, Solar Oven, Electric Bicycle, see personal website