

EDUCATION

Olin College of Engineering
B.S. Mechanical Engineering, 2019 – 3.76 GPA
Recipient of half-tuition scholarship

Bellevue High School
Valedictorian

SKILLS

CAD/PDM: NX, SolidWorks (11 Yrs), Enovia/SW PDM, Agile PLM, Catia

SOFTWARE: ANSYS/FEA, MATLAB, Excel, Python, Arduino, Confluence, JIRA, COMSOL, Airtable, Java, PCB Layout

FABRICATION: GD&T, Injection Molding, Mill, Lathe, Casting, Welding, Stamping, 3D Printing, Composites, CMM/OMM/Gauging, DFM/DFA

LANGUAGES: English - native, Chinese (Mandarin)

EXPERIENCE

AURIS HEALTH/J&J ROBOTICS AND DIGITAL SOLUTIONS

Mechanical Engineer III · San Francisco, CA

2021 to present

- Led mechanical design of surgical robotic subsystem from concept through NPI; integrated PCA/FPC/FFC's and interconnects; interfaced with industrial design; managed BOM and released components; developed production fixtures and processes.
- De-risked design with linear and concentric statistical tolerance stack-ups, and through structural, thermal, bearing life, and sensitivity analyses. Released documents for FDA approval.
- Drafted hundreds of detailed manufacturer drawings with GD&T and reviewed inspection plans with quality.
- Evaluated first article inspection data to resolve non-conformances with overseas and domestic supplier. Collaborated with manufacturers to incorporate DFM and inspection feedback, improving part yield by 20%.
- Created thorough test plan to identify friction and cogging sources. Analyzed results with FFTs to deliver solutions that reduced friction by 70% and decreased product part count by 3%.
- Produced 120+ line DFMEA in context of IEC 60601, critiquing system design for potential failures, hazards, and mitigations.

Mechanical Engineer · San Francisco, CA

2019 to 2021

- Prototyped handheld interface devices for physicians and incorporated feedback from user studies to finalize architecture.
- Designed accelerated life fixture to run wire rope to 13 million cycles; managed strategic manufacturer and contractor relations to develop new specifications that decreased strain by 30% and increased product life by 40%.
 - Developed novel design for retaining wire rope, validated frictional slipping failure with ANSYS model and prototype testing.
- Created thermal model for electronics heat dissipation, devised experiment to verify surfaces remain touch-safe per IEC 60601.
- Served as lead mechanical resource to develop and program custom 3-axis robotic gantry in collaboration with verification group. Presented findings of various product evaluation tests to guide performance goals.

TESLA

Engineering Design Intern · Palo Alto, CA

2018

- Led design of high voltage enclosure and conducted accelerated environmental testing to characterize product life.
- Designed plastic injection molded enclosure with poka-yoke features; performed draft, flow, and hook strain analyses.
- Spent a week working on the Model 3 assembly line, advised improvements to manufacturing instructions and equipment.
- Developed installation method for one ton battery unit, validated process with MATLAB and comprehensive load cell test plan.

FORMULA SAE ELECTRIC RACING

Mechanical Team Lead · Boston, MA

2015 to 2019

- Mechanical Lead of 45-student team from 2016-17; drove vehicle architecture decisions, managed project scope, chassis integration, and cross-disciplinary communication; carried out aggressive fabrication schedule to manufacture 250+ parts.
- Designed high voltage battery enclosure to IP65 compliance, drove battery sizing and Li-ion cell battery architecture through lap-time simulation, cut installation time by 60% from prior year.
 - Developed ANSYS model to simulate non-linear behavior of welds in heat-affected zone under peak physical loads.
- Led chassis design, developed finite element model to increase torsional stiffness by 12% while decreasing weight by 15%.
 - Created MATLAB suspension loads model to perform extensive FEA analysis on frame stress and deflection.
- Led design and manufacturing for aero features with high density foam mold, produced fiberglass and carbon fiber laminates.

FRC ROBOTICS MENTOR

Technical Mentor · San Francisco, CA

2021 to present

- Mentoring high school students to learn fundamentals of robotics and to inspire the next generation of engineers.