

Danielle Jeon

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EDUCATION

University of California, Berkeley – College of Engineering

May 2028

B.S. Bioengineering/Mechanical Engineering

GPA: 3.35

- **Relevant Coursework:** Solid Mechanics, Thermodynamics, Three-Dimensional Modeling, Computer Programming and Numerical Methods, Physics Mechanics, Multivariable Calculus, Intro to Biomedicine for Engineers, Linear Algebra
- **Engineering Skills:** 3D Printing / Laser Cutting / Soldering / Engineering Drawing / Tooling Design / GD&T / FEA / DFM / DFA (Design for Manufacturing & Assembly) / Technical Documentation
- **Technical Skills:** SolidWorks / MATLAB / Python / AutoCAD / CATIA / Java / C/C++ / HTML / CSS / Fusion / Onshape

RESEARCH

Loma Linda University – Neuroscience Research Assistant | Fusion, Cyrosectioning, Staining Jan 2025 - Dec 2025

- Engineered a custom external casing for a Neuropixel electrode probe base and headstage using Fusion CAD, optimizing for biocompatibility, dimensional constraints, mechanical stability, and seamless integration with microelectronic components
- Collaborated closely with neuroscientists to practice cytokine staining and advanced imaging, while also gaining hands-on experience in thermal regulation, precise sample preparation, and maintaining critical sterile conditions in over several trials
- Performed cryosectioning and high-resolution microscopy on postnatal day 10-12 rat brain tissue to assess decay over time

Columbia University - Independent Researcher | Onshape, Material analysis

Oct 2024 - Dec 2024

- Designed a modular upper extremity prosthetic socket using Onshape CAD, focusing on anatomical fit and user adaptability
- Researched advanced bio-materials to use for replaceable socket linings through scholarly literature and biomedical sources
- Presented findings and CAD at virtual symposium with 300+ attendees, displaying innovation in prosthetic interface design

PROJECTS

Berkeley Formula Racing – Suspension General Team Member | Solidworks, FEA Analysis

Aug 2026 - Oct 2026

- Designed and optimized a front suspension rocker for a Formula SAE vehicle in SolidWorks, integrating a given pull-rod and damper mounting geometry while following competition regulations and structural requirements, including double shear
- Conducted finite element analysis (FEA) to evaluate stress distribution, displacement, and structural integrity under hand-calculated/tested suspension loads, iterating the rocker's geometry and refining mesh density in its critical stress regions
- Evaluated material selection and weight-reduction strategies in order to balance strength and manufacturability, achieving a mass of 91.54 g with 6061-T6, maximum von Mises stress of 155 MPa, displacement of 0.19 mm, and min. FOS of 1.8

Wind Turbine and Support Tower – CAD Lead | CAD, Assembly

Jan 2026 - May 2026

- Designed and 3D modeled a 3-blade wind turbine assembly replicating an NACA 4412 airfoil on Solidworks, incorporating a 6° angle of attack and 20° angle of twist root-to-tip to fully optimize torque and power generation a low Reynolds number
- Conducted durability testing to characterize tower stiffness, achieving 10.4 N/mm with an essentially linear displacement response, confirming its elastic behavior and validating structural reliability under operational loads through Hooke's Law
- Produced a surplus of power output (1.98 W), identifying blade mass, surface roughness, and angle of attack as key factors

Smart Solar Panel Battery Pack – Mechanical Design Lead | CAD, Assembly, Analysis

Sept 2025 - Dec 2025

- Led a 10 person engineering team in developing a miniature solar-powered phone charger with a dual-axis tracking system, achieving and validating an average iPhone charging time of approximately 2 hours under natural sunlight in several trials
- Coded a solar-tracking algorithm in C++ that optimized panel orientation by analyzing current data measurements from an I2 C current sensor and leveraging real-time clock (RTC) data to estimate the sun's position and maximize energy collection
- Prototyped in Onshape a two-axis mounting system, the enclosure, and gear mechanism, driven by two 180° servo motors

Redlands Robotics – Mechanical Design Lead | CAD, Assembly, Analysis

Sept 2024 - Dec 2025

- Designed, modeled, and iterated mechanical components for robotics competitions using Onshape, optimizing for weight, durability, structural integrity, and manufacturability while meeting dynamic First Robotics Competition game constraints
- Collaborated with a small, cross-functional, interdisciplinary robotics teams to efficiently prototype, test, and refine multiple robot designs under high pressure and tight competition timelines, reinforcing rapid design iteration and precise prototyping
- Strengthened CAD modeling, tolerance analysis, and assembly skills in a fast-paced, team-driven engineering environment

ABOUT ME

- **Interests:** Running / Gym / Crocheting / Fashion / Baking / Cooking / Photography / Snowboarding / Traveling
- **Extracurriculars:** Theta Tau Professional Engineering Society, Biomedical Engineering Society