Ivan Kuang

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EDUCATION

University of California, Berkeley Expected Graduation - **May 2028**

Mechanical Engineering Undergraduate Student

Relevant Coursework: Python/MATLAB, Solidworks Modeling, Solid Mechanics, Data Science/Machine Learning for Engineers, Electricity and Magnetism

SKILLS

Technical/Software Skills: Solidworks CAD and FEA simulations, Jupyter Notebook, Python Programming, Sketchup modeling, OnShape, Fusion 360, 3D Printing, Matrix Laboratory (MATLAB), Woodworking

Awards/Certifications: ASME 2025 Cadathon 1st Place, SkillUSA Cabinetmaking Gold, 3D PrintSprint Bootcamp

WORK EXPERIENCE / INVOLVEMENTS

Airframe Engineer | Space Technology and Rocketry **August 2025 – Present**

- Engineered the chassis extension on the Solid Demonstrator rocket, utilizing Onshape CAD and Solidworks FEA, to eliminate a high-stress coupler, thereby maximizing the structural Factor of Safety (FOS) and ensuring a high accuracy representation to the primary flight vehicle
- Designed and implemented airframe runners and protection systems to mitigate structural damage to critical components that extended beyond the main airframe

Chassis Engineer | Cal Solar Racing **September 2024 – Present**

- Employed SolidWorks for CAD modeling to design for simulations, focusing on optimizing vehicle reinforcement for enhanced occupant safety while adhering to race constraints
- Developing composite manufacturing plans for the lower occupancy cell, specifying epoxy application, clamping strategy, and joining methodology to achieve final assembly/structural requirements

Research Fellowship | Caltech Seismo Lab Fellowship **March 2023 – August 2023**

- 1 of 12 selected students to participate at Caltech's Seismology Earthquake Fellowship
- Formulated a distinctive magnitude metric with the capacity to accurately forecast earthquakes of up to 4.0 magnitude, leveraging Raspberry Shake Geophones.

Cabinetmaking | SkillsUSA **September 2022 – May 2024**

- 1 of 4 members to represent Region 3 Cabinetmaking at SkillsUSA state competition
- Raised and managed funds to ensure tournament entry funds for members through fundraisers
- Analyzed blueprints to model 3D representation of project in SketchUp

Server | Chinese Blossom Restaurant **July 2022 – July 2025**

- Provided customer service in a fast-paced dining environment, ensuring accurate order delivery
- Supported the training and integration of new team members, contributing to a positive work environment

PROJECTS

Wind Turbine

- Spearheaded the comprehensive design, finite element analysis (FEA), and advanced additive fabrication (FDM 3D printing) of a high-performance wind turbine system. The iterative optimization process maximized power efficiency and structural rigidity, achieving a peak power coefficient that yielded a 500 mWatt output and producing a 178g tower structure which can sustain a 3500 kg static load with negligible elastic deformation.
- Collaborated with peers in a five-member engineering team, managing the entire product lifecycle from conceptual CAD modeling (SolidWorks) under stringent mass, dimensional, and volumetric constraints, through to prototype validation and the successful compilation of a comprehensive report.

C.A.R.E. CAD

- Designed a self-maneuvering, autonomous material handling robot (C.A.R.E.) for ISO Class 1-5 cleanroom environments to transport sensitive semiconductor materials (5-50 lbs load capacity).
- Integrates three core subsystems: a self-stabilizing tray using a 3 DOF kinematic system with stepper motors for vibration minimization, an autonomous drive utilizing Mecanum wheels for omni-directional movement , and a stainless steel robotic arm for automated pick-and-place precision.
- Utilized SolidWorks and Onshape for mechanical design and Solidworks FEA to achieve a factor of safety greater than 800 on critical load-bearing components , and selected cleanroom-compatible materials (stainless steel & polycarbonate) to ensure minimal particle generation and static discharge.