Ishaan Gupta

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EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY Berkeley, CA

- B.S. Mechanical Engineering, B.S. Electrical Engineering Computer Science (EECS) Graduation: May 2025
- **Relevant Coursework:** Manufacturing and Design Communication, Data Structures (CS 61B), Designing Information Devices and Systems (I & II), 3-D Design with SolidWorks, CAD-Advanced Applications, Statistics and Data Science for Engineers

SKILLS

- **Engineering Skills:** CAD/CAM, FEA, Rapid Prototyping, Product Design, GD&T, Design for Manufacturing, Microcontroller Programming, BOM Management
- **Fabrication Skills:** CNC Manufacturing, Manual Mills, Hand Tools, 3-D Printing, Waterjet and Laser Cutting
- **Programming:** C++, MATLAB, Java, Python
- **Software:** Fusion 360, SolidWorks (CAD/CAM/Simulation), Autodesk Inventor, OnShape, Microsoft Office
- **Certifications:** CSWP - Certified SolidWorks Professional

WORK EXPERIENCE

Student Research Assistant Jun 2023 - Present

A-Lab, Cedar Group, Lawrence Berkeley National Laboratory | Berkeley, CA

- Aided in developing an autonomous laboratory capable of synthesizing materials for battery applications, utilizing robotics and artificial intelligence. Worked along-side post doctorate and doctoral students under Professor Gerbrand Ceder
- Improved a robot cell handling sample cap dispensing and cap placing to reduce failure rate and reliability from 2% to .01%. Achieved this by making the system passive, reducing the reliance on repeated motor actuations to dispense caps. Used beam-break sensors to detect caps and programmed Aurdinos to run logic and communicate with the larger system.
- Designed the cell to be modular and constructed of either 3-D printable or off-shelf components, allowing for rapid iteration and lowered manufacturing costs and turnaround times.

Co-founder, President, and Engineering Consultant Sept 2022 - Present

Berkeley Engineering Solutions | Berkeley, CA

- Consulted Bay Area startups on mechanical design projects, providing technical support and manpower for projects they lack the bandwidth to complete
- Designed a modular product testing rig, with a focus on UX and modularity, accommodating different testing equipment, testing states, and product variations. Improved on the existing design by allowing for the product to be tested at multiple angles, reducing testing cost by requiring only single testing rig for a give product
- Consulted a YC22 agritech startup on developing a smart oven 1/5 the size of the existing unit to increase their learning rate, allowing for multiple testing configurations to run simultaneously. Managed 5 engineers, maintained our BOM, and manufactured the prototype within our $1500 budget

Mechanical Engineer Jul 2022 - Dec 2022

Combat Robotics at Berkeley | Berkeley, CA

- Re-designed armor panels for Battle Bot GLITCH in Fusion 360 for Discovery Channel Show Battle Bots, with a focus on design for manufacturing and modularity over previous armor design
- Improved design utilized rubber shock isolators to disperse kinetic energy from heavy impacts and allowed for a swapable offensive focused configuration
- Worked in the assembly and fabrication of armor panels, grinding armor panels to prep for welding
- Slashed manufacturing costs to bring the components within the $15000 budget via DFM
- Collaborated with water jet manufacturing sponsor for production of the armor panels to account for their manufacturing tolerances and limitations

Co-founder & Design Lead Aug 2020 - Jun 2021

UH-OH Robotics | Los Angeles, CA

- Led 5 engineers and competed with combat robot AXOLOTL for Season 5 of the Discovery Channel Show Battle Bots
- Rapidly designed, fabricated, assembled, and tested AXOLOTL within a 4-week time frame, the lowest out of any competing robot, and with the 2nd lowest budget out of 64 competing teams
- Created manufacturing drawings and sourced local manufacturers and manufacturing sponsors, reducing the cost of production by 35% and turnaround time to 2 weeks.
- Performed FEA in SolidWorks on the weapon system to optimize weight and instantaneous energy delivery
- Repaired and fabricated parts of AXOLOTL on CNC and Manual machines between matches