Ishaan Gupta

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EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY   Graduation: May 2026
- B.S. Mechanical Engineering, Minor in Electrical Engineering Computer Science (EECS)

WORK EXPERIENCE

Hardware Engineering Intern   May 2024 - Aug 2025
Neptune Medical | Burlingame, CA
- Aided R&D efforts for a deep endoluminal flexible robot; de-risked multiple R&D workflows, assembled and tested custom brushless motors, designed manufacturing fixtures, performed tolerance stack analysis, and used GD&T to draft manufacturing drawings
- Tasked with an initial exploration of a human-machine interface cart for the product revision of the system. Implemented 60601-01 medical electrical equipment standards and generated system requirements. Designed and delivered a prototype of the HMI to the industrial design team for further refinement.

Hardware Engineering Intern   Feb 2024 - May 2024
Covariant.ai | Emeryville, CA
- Ran high-stakes investor demos to showcase the capabilities of pick and place robots, including NVIDIA and Amazon
- Assembled electro-pneumatic components and conducted end-of-line testing on vacuum generator assemblies
- Designed filters for end-of-arm gripper tooling to reduce plastic particulate build-up from customer product packaging

Student Research Assistant   Jun 2023 - May 2024
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 alongside doctoral students and postdocs under Professor Gerbrand Ceder
- Improved a robot cell handling sample cap dispensing and cap placing to reduce failure rate from 2% to .01%.
- Fully owned the design, fabrication, and testing of a cell capable of automatically capping and decapping cap samples by repurposing an Ender 3 3-D printer with custom firmware, and pneumatic SMC robotics grippers for rapid deployment and integration. Designed, built, and tested a lab safety-compliant 240-volt electrical and pneumatic box.

Co-founder   Sept 2022 - Present
Berkeley Engineering Solutions | Berkeley, CA
- Co-founded a student organization to consult Bay Area startups on mechanical and electrical R&D projects, providing technical support and manpower for projects they lack the bandwidth to complete
- Grew organization to 25 members, supporting 4 project teams. Sourced and negotiated clients, raising earnings to 25,000
- Consulted a YC22 agri-tech startup on developing a smart oven 1/5 the size of their existing unit to increase their learning rate, allowing for multiple testing configurations to run simultaneously. Managed 5 engineers, and manufactured and tested a working prototype within our $1500 budget

Co-founder & Design Lead   Aug 2020 - Jun 2021
UH-OH Robotics | Los Angeles, CA
- Led 5 engineers and competed with Battle Bot AXOLOTL for Season 5 of the Discovery Channel Show Battle Bots
- Created manufacturing drawings using GD&T, and sourced local manufacturers and manufacturing sponsors, reducing the cost of production by 35% and turnaround time down to 2 weeks
- Performed FEA in SolidWorks on the weapon system to optimize for weight and instantaneous energy delivery

PROJECTS

Custom Smart-Watch   Jan 2024 - May 2024
Hands-on PCB Engineering | University of California, Berkeley
- Designed and soldered a 2-layer smartwatch PCB, with an ESP32-Solo microcontroller, heart rate sensor, and MPU-6050
- Validated a lithium-ion battery charging and management circuit that allowed the device to function while being charged. Utilized I2C as the communication protocol and wrote firmware in C++, enabling heart rate reading and step counting

Drawing Robot
MEC ENG 135 & MEC ENG 130 | University of California, Berkeley   Jan 2025 - May 2025
- Designed a custom stepper motor controller PCB around the RP2040 for a robotic pen plotter. Implemented field-oriented control in Raspberry Pi SDK using C++, implemented RTOS, and CAN communication with an ESP32
- Demoed at OPEN SAUCE 2025 to 10,000 convention attendees and STEM YouTubers

SKILLS

- **Engineering Skills:** CAD/CAM, FEA, Rapid Prototyping, Product Design, GD&T, Design for Manufacturing, Microcontroller Programming, BOM Management, PCB Design, Circuit Design, Circuit Validation
- **Fabrication Skills:** CNC Manufacturing, Manual Mills, Hand Tools, 3-D Printing, Waterjet and Laser Cutting, Soldering
- **Programming:** Java, Python (pandas, sci-kit learn, numpy, matplotlib), C++, MATLAB, LabVIEW
- **Software:** SolidWorks (CAD/CAM/Simulation), OnShape, Fusion 360, Microsoft Office, KiCad
- **Certifications:** CSWP - Certified SolidWorks Professional