Jack Dibachi

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Education

Stanford University **September 2021—June 2023**
M.S. Mechanical Engineering: Robotics and Controls
University of California, Santa Barbara **July 2016—June 2020**
B.S. Mechanical Engineering with Honors, 3.8/4.0 GPA

Work Experience

Simpl Global — *Product Development Engineer* **September 2020—present**

- Designing PCBs for passive cell balancing, power conversion, temperature sensing, and surge protection.
- Writing algorithms for Wi-Fi meshing, PWM, wave data acquisition, interrupt handling, and serial communication.
- Developed firmware for an AC power inverter, and designed a feedback controller to mitigate harmonic distortion.

Intuitive Surgical — *NPI Component Manufacturing Engineering Intern* **June 2020—August 2020**

- Revised engineering drawings and implemented GD&T to ensure proper inspection and function of components.
- Saved thousands of dollars by optimizing plastic and metal components for injection molding and die casting.

Bruker Nano Surfaces — *Mechanical Engineering Intern* **June 2019—September 2019**

- Contributed to research and development of manual and automatic probe exchange for atomic force microscopes.
- Wrote work instructions and conducted validation tests for a thermal module enabling scans of biological samples.

UCSB Department of Physics — *Student Assistant* **June 2018—June 2019**

- Developed a distribution system to transfer 17 tons of liquid scintillator to storage tanks in the LZ dark matter detector.
- Designed, built, tested, and wrote operating procedures for a scale prototype system to verify critical functions.
- Fabricated unique gas bubblers, gaskets, reservoirs, and a liquid bubbler used to strip scintillator of contaminants.

Projects

UCSB Rocket Propulsion Laboratory — *Co-founder and Chief Engineer* **October 2018—June 2020**

- Established a rocketry team to foster academic and career opportunities for students interested in aerospace.
- Directed research and development of a rocket propulsion system to be used in the FAR/Mars student competition.
- Responsible engineer for engine research, feed system design, electrical systems integration, and operations.

ME 153: Product Design — *Team Member* **April 2019—June 2019**

- Wrote firmware and drafted mechanisms for a coffee lid prototype capable of temperature control and spill prevention.
- Won the award for Most Marketable Product at the mechanical engineering junior design fair.

UCSB Hyperloop — *Maglev Team Member* **October 2017—July 2018**

- Assisted assembly and testing of the maglev system used on the UCSB pod for the SpaceX Hyperloop Competition.
- Developed operating procedures, engineering controls, and data acquisition techniques for maglev characterization tests.

Skills

Software tools: SolidWorks, Ansys, OrCAD, PSpice, Microsoft Office, Git, Overleaf, CES, Simulink, Postman
Manufacturing: Injection molding, die casting, CNC machining, 3D printing, GD&T, PCB manufacturing, wafer processing
Programming: Python, MATLAB, C/C++, Javascript, LabVIEW, Bash, PowerShell, FreeRTOS, TensorFlow
Elective courses: Advanced materials, robotic planning, MEMS, discrete controls, machine learning, computer architecture

Affiliations and Awards

UCSB: Tau Beta Pi VP| Engineering Writing Excellence Award | Graduation with Honors | ME 153 Most Marketable Product

Interests and Hobbies

Robotics, mechatronics, embedded systems, programming, bicycle maintenance, golfing, backpacking, ocean kayaking