Alan Deutsch

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EDUCATION

Tufts University — Medford, MA
B.S. in Mechanical Engineering, 2025, GPA: 3.87 (Dean's List all semesters)
Spring 2024 Semester Abroad, University College London — London, UK

PROFESSIONAL EXPERIENCE & LEADERSHIP

Tufts Solar Vehicle Project (TSVP) – https://sites.tufts.edu/solarvp — Medford, MA
Mechanical Co-Lead — May 2024 – Present
Operations Lead — September 2023 – May 2024

- Designing, prototyping, and fabricating (manual mill/lathe and CNC mill) components of the suspension, steering, and brake systems. Bench-testing components using mock MDF-chassis, ensuring parts function as intended before final integration.
- Using wet layup, resin infusion, CNC mold-making, and other composites methods to manufacture the chassis and aeroshell.
- Coordinated the transportation of the molds (one 20' long) to and from the CNC shop, resulting in a seamless operation.
- Previously led sponsorship and media teams, guiding long-term strategy, communicating with university admin and existing sponsors, finding new sponsors, and keeping the team organized. Led efforts to raise over $50000 since club's founding.
- Implemented Gantt charts, weekly check-ins, Notion, and delegated tasks – greatly improving team organization.
- Currently active (since Jan. 2025) in finding and cold-calling sponsors, saving the organization $15000+ and counting.

NIO – ONVO — Shanghai, China
Intern, Vehicle Performance Team - Charging — June 3, 2024 – August 30, 2024

- Created several Python Pandas data analysis tools, including a Tkinter GUI to read, plot, and analyze CAN charging data, providing a free, mac-compatible alternative to Vector CANalyzer and resulting in a much faster data analysis workflow.
- Conducted thorough testing and analyses on DC fast charging performance of the L60 SUV using CANalyzer and the tools I had developed, writing reports and advising the battery design team on potential improvements to charging strategy.
- Researched and wrote a report on simultaneous charging – the charging of multiple cars simultaneously by a single charger.
- Investigated the feasibility for the L60 to "trick" the charger into providing more power to the car than other cars in a simultaneous charging scenario, resulting in the conclusion that it is not possible in most scenarios.

Tufts University Mechanical Engineering Department — Medford, MA
Teaching Assistant, ME 116 | Composite Materials - https://alandeutsch.me/composites-projects/ — January 2025 – May 2025

- Wrote standard operating procedures (SOPs), prepared lab plans, and led hands-on labs to guide students in fabricating composite parts using carbon fiber (CF), Kevlar, and fiberglass through wet layup and resin infusion methods.
- Assisted and provided expertise for students creating projects of their choice, including a CF steering wheel and guitar.

Tufts University CEEO (Center for Engineering Education and Outreach) — Medford, MA
Intern, Future Educational Technologies (FET) Lab - https://alandeutsch.me/ceeo-internship/ — June 2022 – February 2023

- Developed a STEM educational framework making use of the LEGO Education SPIKE Prime development platform, Python, and Mind Render, a Japanese visual programming app that I think of as a cross between Scratch and Minecraft.
- Led hackathons for middle school students and found positive educational outcomes of the framework.

SELECTED PROJECTS

Lidar Cart - https://alandeutsch.me/lidar-cart/: Designed, fabricated, prototyped, and tested a 3-wheeled push cart equipped with a camera, lidar unit, battery, and laptop for collecting data relevant to training autonomous vehicle detection algorithms. Employed extensive use of CAD (especially the Onshape frame tool), manual mill/lathe, and rapid prototyping techniques.
CNC Machining - https://alandeutsch.me/cnc-machining/: Learned CNC programming and operation to fabricate parts for solar car.
TSVP Chassis - https://alandeutsch.me/tsvp-chassis/: Led the effort to design, fabricate, and transport the mold for the chassis of our car employing my skills in logistics and planning, along with CAD and wood working.
Claw Game - https://alandeutsch.me/claw-game/: Designed, fabricated, and coded a 3-motor (side-side, up-down, open/close) mini claw game using CAD, laser cutting, and Python.

SKILLS & INTERESTS

Computer: Fusion, SolidWorks, Onshape, KiCad, COMSOL, FEA (SolidWorks), Typing (130 WPM+), Adobe CC
Fabrication: 3D printing, laser cutting, water jet, welding, resin infusion, CNC, machine shop (lathe, milling, drilling, etc.), drawings
Coding: Python, C++, PHP, SQL, HTML/CSS, MATLAB, LabVIEW
Languages: Mandarin Chinese (fluent), German (proficient), Spanish (elementary)
Hobbies: Music/violin, languages, gym, reading, filmmaking (DP for two award winning movies)

Updated May 2025