

# Alan Deutsch

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## EDUCATION

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Tufts University

Medford, MA

**B.S. in Mechanical Engineering**, May 2025, GPA: 3.87, *summa cum laude*

Spring 2024 Semester Abroad, University College London

London, UK

## PROFESSIONAL EXPERIENCE & LEADERSHIP

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**Tufts Solar Vehicle Project (TSVP)** – <https://sites.tufts.edu/solarvp>

Medford, MA

*Mechanical Co-Lead*

May 2024 – May 2025

*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 CEOO (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

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**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

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**Computer:** Onshape, Fusion, SolidWorks, KiCad, FEA/CFD, Adobe CC, Typing (130 WPM+)

**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