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

NIO - ONVO — Shanghai, China

Charging Performance Intern — June 3, 2024 – August 30, 2024

- NIO is a Chinese premium EV manufacturer and pioneer of battery-swap technology.
- Worked on the L60, the first car of NIO's new family-oriented sub brand, ONVO.
- Created several Python Pandas data analysis tools, including a Tkinter GUI to read and interpret CAN charging data.
- Conducted thorough testing and analyses on L60 DC fast charging performance using CANalyzer and the tools I had developed, writing test reports and advising the design team on potential improvements to the 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 currently feasible.

Tufts Solar Vehicle Project (TSVP) – https://sites.tufts.edu/solarvp — Medford, MA

Mechanical Co-Lead — May 2024 – Present

Operations Lead — September 2023 – May 2024

- Co-leading 30+ person mechanical team aiming to build a globally-competitive solar-powered car by July 2025.
- Using wet layup, resin infusion, CNC mold-making, and other composite techniques to manufacture the carbon fiber chassis, canopy, battery box, and aeroshell. Coordinated the transportation of the molds (one 20' long) to and from the CNC shop.
- Designing (Onshape, Solidworks, Altair) and fabricating (manual mill/lathe, laser cutting, outsourcing) components of the suspension, steering, and brake systems. Bench-testing components before integrating to the chassis.
- Previously led sponsorship and media teams, guiding long-term strategy, communicating with internal and external stakeholders, 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 productivity.

Tufts University CEEO (Center for Engineering Education and Outreach) — Medford, MA

Future Educational Technologies (FET) Lab Intern — 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.
- Led hackathons for middle school students and found positive educational outcomes of the framework.

Tezign — Shanghai, China

Data Analysis Intern - Strategy Department — June 2020 – August 2020

- Analyzed user metrics and developed an online suite of tools using PHP, MySQL databases, and HTML/CSS to determine optimal customer leads, greatly reducing time spent sourcing leads.
- Self-managed project deliverables and communicated effectively with stakeholders in English and Chinese.

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.

TSVP Chassis – https://alandeutsch.me/tsvp-chassis/: Led the effort to design, fabricate, and transport the mold for the chassis of our car using CAD and wood working techniques.

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: Fusion360, SolidWorks, Onshape, KiCad, COMSOL, Drawings (GD&T), Finite Element Analysis (FEA), Typing (120 WPM+)
Fabrication: 3D printing, laser cutting, water jet, welding, resin infusion, machine shop (lathe, milling, drilling, etc.)
Coding: Python, C++, PHP, SQL, HTML/CSS, MATLAB
Languages: Mandarin Chinese (fluent), German (proficient), Spanish (elementary)
Hobbies: film, music, reading, learning languages, violin, ultimate frisbee

Updated January 2025