

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

- 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 chassis, aeroshell, and canopy. Led the effort of transporting the molds (one 20' long) to and from the CNC shop.
- Designing, prototyping, and fabricating (manual mill/lathe and outsourcing) components of the suspension, steering, and brake systems. Bench-testing components using mock MDF-chassis before final integration.
- Currently active (since Jan. 2025) in finding and cold-calling sponsors, saving the organization \$15000+ and counting.
- 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 productivity.

NIO - ONVO

Charging Performance Intern Shanghai, China
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 to "trick" the charger into providing more power to the L60 than other cars in a simultaneous charging scenario, resulting in the conclusion that it is not currently feasible. Communicated findings solely in Chinese.

Tufts University CEO (Center for Engineering Education and Outreach)

Future Educational Technologies (FET) Lab Intern Medford, MA
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

Data Analysis Intern - Strategy Department Shanghai, China
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: Fusion (CAM), SolidWorks, Onshape, KiCad, COMSOL, Drawings, FEA (SolidWorks), Typing (120 WPM+), Office, Adobe CC

Fabrication: 3D printing, laser cutting, water jet, welding, resin infusion, CNC, machine shop (lathe, milling, drilling, etc.)

Coding: Python, C++, PHP, SQL, HTML/CSS, MATLAB, LabVIEW

Languages: Mandarin Chinese (fluent), German (proficient), Spanish (elementary)

Updated February 2025