

# Saurabh Pal

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## Education

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- M.S. Mechanical Engineering**, Tufts University Sept 2024 - May 2025
- Design & Manufacturing tracks
- B.S. Mechanical Engineering**, Tufts University Sept 2020 - May 2024
- Summa Cum Laude (GPA 3.84/4)
  - Dean's List: Fall 2021, Fall & Spring 2022 and 2023, Spring 2024
  - Mechanical Engineering Awards: 2024 Vincent Manno Leadership Award

## Skills

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**CAD/CAE** SolidWorks, Onshape, Fusion 360, CATIA v6, Altair Hypermesh/Inspire, Ansys Fluent/Mechanical/ACP, COMSOL  
**Manufacturing** CNC Machining, 3D Printing, Sheet Metal, Composites, Resin Casting, Manual mill/lathe, Laser cutting, MIG  
**Languages** Python, MATLAB, MCU Programming (CircuitPython, Micropython, Arduino), GD&T - ASME Y14.5

## Experience

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- Industry Process Consultant Intern**, Dassault Systemes – Waltham, MA June 2025 – Present
- Created large CAD models in SolidWorks xDesign to stress-test the software, providing feedback for UX and R&D.
  - Evaluated capabilities of the software to provide tailored technical information for pre-sales to potential SW users.
  - Restored and managed CNC mill in the 3DEXperience Lab to allow SolidWorks partner startups to manufacture prototypes.
- Mechanical Design Engineer - Metalization R&D**, Maxeon Solar Technologies – San Jose, CA May 2023 – Aug 2023
- Developed and integrated linear motion system and vacuum end-effector to allow automatic application of solar cell contacts in a prototype manufacturing line, reducing labor needs and increasing the speed of sample production.
  - Drafted part and assembly drawings for CNC fabrication, constructed BOMs and instructions for manufacturing.
  - Provided methods for simplifying designs, increasing accuracy, and improving testing methodology.
  - Involved in several projects in other departments to improve solar module reliability and devise experimental setups.

## Projects

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- Tufts Solar Vehicle Project** Sept 2022 - May 2025
- **Team Founder, President** [now.tufts.edu/2023/12/05/saurabh-pals-solar-vehicle-project](https://now.tufts.edu/2023/12/05/saurabh-pals-solar-vehicle-project)
    - Worked with administration to successfully found an engineering team to design and build a road-legal solar car.
    - Led establishment efforts, fundraising over \$40,000 through corporate sponsorships and university platforms.
    - Project managed teams from 2 - 15 people for various design and manufacturing projects.
  - **Aluminum vehicle rims** [palsaurabh.com/wheels](https://palsaurabh.com/wheels)
    - Designed and validated 16" rims with static and fatigue analysis in Solidworks.
    - Created drawings with ASME Y14.5, communicated directly with a machine shop for feedback and production.
  - **Front & rear suspension** [palsaurabh.com/suspension-assemblies-2/](https://palsaurabh.com/suspension-assemblies-2/)
    - Determined design parameters and designed large, moving suspension assemblies with weight-optimized parts.
    - Made prototypes and final parts with manual mill & lathe, CNC mill, and other tools.
  - **Composite vehicle shell and chassis.** [palsaurabh.com/aerodynamics/](https://palsaurabh.com/aerodynamics/) & <https://palsaurabh.com/chassis/>
    - Refined aerodynamic model with 150+ CFD runs for low-drag optimization.
    - Created MATLAB model using historical weather data to simulate race performance and compare designs.
    - Designed corresponding single and multi-part molds, coordinated manufacture with a large-scale tooling shop.
    - Conducted Instron tests to characterize composite materials, test glue-joints.
    - Refined structural chassis layup using composite FEA & post processing in Altair Hypermesh/Hyperview.
  - **High voltage battery.**
    - Created requirements and selected components, batteries, fuses, etc for a ~150V battery system.
    - Designed battery holders, internal wiring harness, and composite enclosure.
  - **Other projects:** [palsaurabh.com/motor/](https://palsaurabh.com/motor/)
    - Spot welder enclosure, full-scale custom motor, braking system & pedals, roll structure design.

## University Projects

- **Robotics** [Robotics short portfolio](#)
  - Conducted literature reviews and helped design swarm robots in Tufts' RLB Lab
  - Designed, built, and programmed various robots for classes using Raspberry Picos and ESP32s, including image and video processing, MQTT, wireless control, and integrations with servos and steppers