

JEET CHANDRESH JAGAD

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EDUCATION

Purdue University, College of Engineering

West Lafayette, Indiana

Bachelors in Mechanical Engineering | Minor in ECE | 3.97 GPA | Dean's List & Semester Honors

2024 – 2028

WORK EXPERIENCE

Performance Engineering Intern – Caterpillar Inc.

May 2026 – Present

- Calibrated closed-loop control maps governing engine actuators and sensors, tuning control system parameters to meet performance and emissions targets on a new 13L diesel engine platform.
- Applied modeling, simulation, and optimization techniques to develop diagnostic calibration tests for air system components such as Air Valves and Turbocharger Valves to test mechanical health of these parts in field deployed machines.
- Created automation tools such as Excel Macros, MATLAB scripts, DIAdem automation scripts that improved test-data processing efficiency and engineering decision-making during data deep dives.

Product Compliance Intern – Cummins Inc.

June 2025 – Aug 2025

- Conducted emissions testing on 3 heavy-duty diesel automotive engines for internal audits per EPA standards, analyzed data for 1000+ parameters in MATLAB & Excel to identify emissions patterns and perform a root cause investigation to identify high emissions cause.
- Improved test plan templates for 4 engine platforms and supported technicians by troubleshooting mechanical faults and diagnostic error codes during engine testing.
- Worked on an FTIR measurement probe standardization project, applying Design of Experiments (DOE) and performing statistical analysis (MLR) in Minitab to model optimal probe positioning, testing 12+ configurations and factoring in flow direction, orientation, and bend proximity to improve FTIR emissions measurements and creating technical documentation to support analysis.

Undergraduate Teaching Assistant – Purdue College of Science

Jan 2025 – May 2025

- Assisted students in understanding C programming concepts, debugging code, and applying engineering problem-solving techniques. Guided lab sessions, graded assignments, and supported course instruction.

LEADERSHIP

Operations Lead – Autonomous Robotics Club

Oct 2024 – Present

- Ensuring all club projects stay on track and communicating with 7 project managers to allocate resources such as funding and lab access and ensuring timely completion of all club initiatives such as mid-semester reviews or social events.

Resident Assistant – Tarkington Hall

Nov 2025 – Present

- Responsible for maintaining an inclusive community by organizing creative floor events for 45+ residents, ensuring engagement, connection, and regular check-ins on all residents all-year round.

PROJECT EXPERIENCE

Wind Structures Team Lead - ASME Energy Team

Aug 2025 – Present

- Designed and analyzed structural and mechanical components for a small-scale **wind turbine** competing in Collegiate Wind Competition including the base plate, foundation rod, and nacelle assembly, and developing yaw mechanisms to enable adaptive nacelle alignment with wind direction all in Autodesk Fusion 360.

Undergraduate Research Assistant – Nina Mahmoudian Lab – Purdue College of Engineering

March 2025 – June 2025

- Designed a universal Launch and Recovery System (LARS) for AUV's chassis using **SolidWorks 3D CAD**, incorporating **engineering drawings**, GD&T, and **mechanism design** for loads up to 80 kg - Integrating with an electro-magnetic latching docking system connected to winch frame on the USV, and securing AUVs during transits of up to 50 nautical miles.

Product Development Engineer - ASME Energy Team

Oct 2024 – May 2025

- Designing and optimizing a **flow hydroelectric generation system** with an integrated filtration mechanism, determining the optimal turbine configuration (35 blades, 22° angle of attack) designed in Autodesk Fusion 360 using iterative prototyping.
- Performed **FEA structural analysis** on 4 housing models using **Fusion360 Simulation**, evaluating stress, displacement, and safety factors to select an optimal design based on cost and durability.
- Manufactured turbine housing from 7 laser-cut acrylic sheets by creating precise DXF files in **AutoCAD**, and operating laser cutter to ensure accurate fabrication and proper tolerancing for assembly purposes.

Design Engineer - Autonomous Robotics Club - Autonomous Piano Hand

Aug 2024 – May 2025

- Optimizing the belt translation system for the hand by reducing vibrations through iterative improvements to pinion diameter and belt width, achieving up to 3% faster and more stable motion.
- Implemented a rotary encoder system to track the hand's lateral position providing precise metrology by attaching a TPU-printed wheel to the main frame, enabling accurate real-time feedback for motion control of stepper motors.

SKILLS

- **Mechanical Design:** SolidWorks, NX Siemens, Autodesk Fusion 360, AutoCAD, CATIA
- **Analysis & Coding Tools:** Microsoft Office (Excel (Advanced), Word, PowerPoint, Access), Minitab, Power BI, C, Python, MATLAB
- **Other Tools:** System Verilog, GTKWave, LTSpice, WordPress, OpenCV, Teamcenter (PLM), PDM