Advait Chordia

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EDUCATION

University of Illinois Urbana Champaign   Champaign, IL
Bachelor of Science   Expected May 2027
Major in Engineering Mechanics; Minors in Materials Science and Architecture
Cumulative GPA: 3.86/4.0

SKILLS

Technical Skills: PTC Creo/Pro Engineer, Siemens NX, SolidWorks, CATIA V5, AutoCAD, Fusion360, Ansys Mechanical, Abaqus, MATLAB & Python

Relevant Courses: Engineering Materials, Mech. Design Optimization, Design for Manufacturing, Statics, Dynamics, Mechanics & Thermodynamics

Certifications & Training: CNC, UTM, Power tools, & Waterjet

WORK EXPERIENCE

FORCE MOTORS LTD.
Mechanical Engineering Intern   Jun 2025 – Aug 2025

- Developed a Python-based mechanical guideline to define critical component geometry for a new 8-web crankshaft prototype with an increased peak firing pressure, reducing simulation iterations by an estimated 20-25%.
- Transformed 10+ 2D legacy powertrain component drawings into 3D models using CATIA V5 for the CAD data migration process using GD&T methods.
- Formulated an Excel-based tool to calculate optimal counterweight COG placement using polar moment of inertia, reducing static and dynamic crankshaft imbalance by >90%.

GALA PRECISION LTD.
Mechanical Engineering Intern   Jun 2024 – Aug 2024

- Conducted FEA simulations using Ansys Static Structural and modal analysis on coil spring designs to compare open vs. closed coil configurations, providing data-backed recommendations to the client.
- Optimized the conveyor systems by introducing angled brackets in a Kaizen-based initiative, reducing part loss from spring spillage during the stress-relieving stage by 90%, saving 15 minutes of labor, daily.
- Demonstrated a 20% difference in compressive force and a 12% variation in displacement under load, highlighting reduced stress concentrations in closed spring designs.

PROJECTS

ILLINI ELECTRIC MOTORSPORT | FSAE
Front Wing Structures Lead   Aug 2024 – Present

- Headed product development of an 8-element carbon fiber front wing using Ansys ACP and Mechanical to define ply schedules, limiting deflection to 0.125" while minimizing mass.
- Engineered carbon-fiber struts in PTC Creo, validated via Ansys Static Structural to withstand 1,533 N of downforce, achieving a 42% weight reduction compared to legacy aluminum designs.
- Fabricated a complete 21-element aero package, executing 100+ hours of precision pre-preg carbon fiber layup to ensure high-fidelity surface finish.
- Directed a team of 6 through the full 2026 vehicle lifecycle, managing timelines to ensure on-time delivery of design, manufacturing, and testing milestones.

COMPOSITES ADDITIVE MANUFACTURING LAB
Undergraduate Researcher   Jan 2025 – June 2025

- Conducted standardized tensile and shear testing on CF3D® composites using Instron systems to evaluate performance, establishing a UTS of 1395 MPa and shear strength of 66.59 MPa.
- Incorporated novel test coupon geometries using SolidWorks to overcome additive manufacturing constraints (minimum tow length), improving test reliability and minimizing material waste through prototype testing.
- Authored a technical paper summarizing tensile and shear characteristics, presented findings to a panel of 3 professors.