

ADVAIT CHORDIA

+1 217 318 7042 | advaitchordia@gmail.com | www.advaitchordia.com

Mechanical Engineering Student specializing in structural design, advanced composites, and FEA-driven optimization.
FSAE structural lead delivering validated composite hardware from concept to track.

Education

University of Illinois Urbana-Champaign
Bachelor of Science in Engineering Mechanics | Minor in Materials Science

May 2027
GPA: 3.86

Skills

- Software & Analysis: SolidWorks, CATIA v5, Creo, Fusion360, Ansys, Abaqus, AutoCAD, Python, MATLAB, DFM, PDM
 - Fabrication & Testing: CNC Machining, 3D printing, Prepreg & Wet layup, Universal Testing Machine, Hand tools
-

Project & Leadership Experience

Illini Electric Motorsport | Formula SAE

Front Wing Structures Project Lead

Aug 2024 to Present

- Replaced a failing CFRP design by sizing 7075 Aluminum mounting struts. Utilized geometric optimization to achieve a 58% mass reduction while maintaining structural margins for bending and out-of-plane loading.
- Led the mechanical design of multi-element aerodynamic assemblies. Focused on manufacturability, material and fastener selection and load path optimization within the internal structures.
- Engineered the joint architecture for 40 structural interface points, sizing standard (10-32/6-32) and aerospace-grade NAS hardware with Keenserts to a FoS of 2 against peak shear loads while mitigating galvanic corrosion risks.
- Collaborated on vehicle integration by sizing strut holes in the monocoque and navigating strict placement limitations.
- Directed structural validation of the front wing, integrating pressure maps into ANSYS to minimize deflection to <0.48" at 95 mph and limit aerodynamic sensitivity to a 0.04 Cl loss.
- Developed SOP layup manuals for a 9-member team, integrating CAD dimensions, ply-nesting results, and oversized cut estimates to ensure replicable and reliable fabrication.
- Led 100+ hours of prepreg layups and vacuum bagging for a 21-element aero package, ensuring structural integrity.

UIUC Aerospace | Composites Additive Manufacturing Lab

Undergraduate Research Assistant

Jan 2025 to May 2025

- Performed tensile and in-plane shear characterization of continuous-fiber composites using a Universal Testing Machine to generate experimentally validated material property data.
 - Designed composite test specimens in SolidWorks, applying Design for Additive Manufacturing principles to meet minimum tow-length constraints and ensure valid specimen failure modes.
 - Developed custom tool paths to control fiber alignment for the fabrication of structurally representative specimens.
-

Work Experience

Force Motors Ltd. | Automotive

Mechanical engineering Intern, R&D Powertrain

June 2025 to Aug 2025

- Reverse-engineered 8 legacy components into 3D models and authored 6 production-ready engineering drawings during a CATIA V5 migration, applying GD&T to reduce tolerance stack-up and ensure interchangeability.
- Designed a Python-based parametric sizing model to evaluate Von Mises stress sensitivities across critical crankshaft dimensions, establishing geometry scaling relationships to support design decisions.
- Resolved rotating assembly imbalance through vector loop analysis, iteratively phasing counterweights to achieve a >90% reduction in net imbalance forces for high-RPM stability.

Gala Precision Engineering | Coil Manufacturing

Mechanical engineering Intern

June 2024 to Aug 2024

- Simulated quasi-static compression of open versus closed ground coil ends using Ansys, quantifying a 20% variance in spring rate and buckling modes to drive compliance with industry standards.
 - Engineered a modification of a mechanical conveyor system to minimize material spillage, reducing daily downtime by 20 minutes and improving overall production efficiency.
-

Other Roles: Course Assistant (Thermodynamics, Statics, Mechanics) | ASME E-fest Lead | TEC Advisor & Lead Photographer