

KEERTHI SEPURI

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PROFESSIONAL SUMMARY

Results-driven Mechanical Design Engineer with 5+ years of experience at top automotive OEMs (Nikola, Tesla). Specializes in **chassis, suspension, and BIW design**, leveraging a **first principles and engineering fundamentals approach** to optimize vehicle performance, reduce mass, and enhance manufacturability. Skilled in **CATIA** and **ANSYS** with a proven track record in **cross-functional collaboration, problem-solving**, and delivering innovative solutions in **fast-paced environments**.

EXPERIENCE

Nikola Motors

Phoenix, AZ

Mechanical Design Engineer, Chassis Team

Aug 2022 – Present

- **Led design and optimization of 45+ suspension components**, achieving **12% mass reduction** through CATIA and FEA implementation with physical testing
- **Launched FCEV** (world's first hydrogen truck), resolving production issues (**8D, 5 Whys, Fishbone**) and reducing scrap by **20%** and line issues by **15%** (FCEV) and **10%** (BEV).
- **Drove next-generation suspension architecture development**, leading DFMEA/PFMEA analyses and presenting strategic recommendations to leadership
- **Created and released engineering documentation** (ESOW, BOMs, GD&T drawings), ensuring supplier alignment and **on-time fabrication**
- **Managed end-to-end component lifecycle** including durability testing, PPAP approvals, and prototype builds
- **Developed company-wide engineering tools** including bolt-sizing calculators and suspension kinematic models, enhancing design efficiency and **mentored junior engineers** in GD&T and tolerance analysis

Tesla

Palo Alto, CA

Mechanical Design Engineer, Chassis Team

Sep 2021 – Jul 2022

- Owned end-to-end design for **Cybertruck** brake lines/hoses and chassis harnesses, **reducing part count by 40%** and **assembly time by 30%** through innovative architecture solutions
- **Invented new plastic clips** and brake fluid fill solution, improving **assembly efficiency by 30%**
- **Managed complex trade-offs** across architecture, service, manufacturing and supplier requirements using DFMEA/PFMEA methodologies and GD&T for robust, cost-effective designs
- **Designed and validated** critical components for **Model 3** hydraulic and **Tesla Semi** pneumatic systems using virtual simulation and physical testing
- **Collaborated with international teams and suppliers** while providing **technical mentorship** to **Tesla Shanghai** engineering team

Pensa Labs

New York, NY

R&D Mechanical Engineer

Mar 2020 – Sep 2021

- Managed \$500K+ product manufacturing portfolio, optimizing supplier relationships and production timelines
- **Led design and validation** of next-generation CNC wire-bending machine, improving precision by 40%
- Implemented **lean manufacturing principles**, resulting in **25% reduction** in production cycle time

Mechanical Engineering Intern

Jun 2019 – Dec 2019

- Improved desktop CNC wire bending machine resolution and accuracy by **80%**

Toyota

Bengaluru, India

Mechanical Engineering Intern

Jun 2017 – Aug 2017

- **Designed and virtually validated** an optimized conveyor system, generating **Rs. 4.8 million** in annual savings and **doubling work efficiency**

EDUCATION

New York University

Master of Science in Mechanical Engineering

Jawaharlal Nehru Technological University

Bachelor of Science in Mechanical Engineering

New York, NY

Graduation Date: Jan 2020

Hyderabad, India

Graduation Date: May 2018

OTHER DESIGN PROJECTS

Automotive Component Design Projects

Jun 2021 – Jul 2021

- Designed **stamped backdoor panel** with 7° draft, sealing flange and wiper motor mounts using CATIA V5
- Designed hood panels for **pedestrian/crash safety** with mastic points and hinge mounts
- Designed **BIW parts** - roof rails, bow roofs, and sunroof components, optimizing for snow-load and heat distortion

BAJA SAE Team - Chassis Design Lead

Jun 2021 – Jul 2021

- **Designed & manufactured** SAE-compliant steel-tube chassis and Suspension using SolidWorks, FEA and GD&T
- **Led final assembly process**, while optimizing the design further for chassis stiffness and mass reduction

SKILLS

Design Tools:

- CATIA V6/3DX (Expert, 10000+ hours)
- CATIA V5 (Expert, 6000+ hours)
- SolidWorks (Advanced)
- NX, Fusion 360 (Proficient)

Analysis & Project Management:

- ANSYS, SolidWorks Simulation (Advanced)
- ADAMS MSC, 3DCS (Proficient)
- JIRA, Confluence, Intellaquest (Advanced)
- 8D, Fishbone, 5Why Analysis
- CAN Bus Analyzer

Core Competencies:

- Sheet Metal & Injection Molding Design
- Suspension Design & Vehicle Dynamics
- DFMEA and PFMEA
- GD&T and Tolerance Stack-up Analysis
- Technical Documentation and communication

Soft Skills:

- Cross-functional Collaboration
- Technical & Non-Technical Communication
- Detail-Oriented
- Strong Work Ethic