Kanishka Kolhatkar

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SUMMARY

Mechanical Engineer with experience in 3D modeling, product development, finite element analysis (FEA), and testing across diverse engineering applications.

SKILLS

- **Mechanical Design & Software:** 3D modeling, Engineering Drawings, GD&T, Bills Of Materials, DFM; SolidWorks, CATIA, Siemens NX, Autodesk Inventor; AutoCAD
- **Engineering Analysis:** FEA, CFD; ANSYS, Abaqus, Ls-Dyna, HyperWorks, COMSOL
- **Data Analysis & Equipment:** MATLAB, Python, MS Office, JMP, Minitab, DAQ

WORK EXPERIENCE

Mechanical Engineer, Sharma & Associates, IL, USA **Oct 2024 – Present**

- Supported the design and development of battery-electric and diesel locomotives, passenger cars, and rail vehicle trucks for Union Pacific, Amtrak, CTA, and NYCT, meeting applicable AAR standards and FRA regulations.
- Developed 3D CAD models, mechanical layouts, and detailed engineering drawings in Autodesk Inventor, translating component and assembly requirements into designs that addressed packaging, serviceability, and system integration.
- Performed structural, fatigue, weld, and bolted-connection analyses using ANSYS and HyperWorks to evaluate design margins, identify critical stresses, and recommend modifications to improve structural performance.
- Collaborated with manufacturing engineers, vendors, and fabrication teams to resolve technical issues, support design reviews, and update engineering drawings and documentation for fabrication and assembly.

Mechanical Engineer (Co-op), Entegris, IL, USA **Jan 2024 – Oct 2024**

- Contributed to the R&D of polyurethane CMP pads for semiconductor polishing, integrating mechanical design, material behavior, and process requirements to improve polishing performance and uniformity.
- Applied first-principles engineering analysis to evaluate pad design concepts and used on-tool experiments to refine designs across multiple iterations.
- Supported material selection through polymer testing and composition analysis to assess the effect of hardness on polishing performance; developed finite element material models and compared predicted behavior with experimental results.
- Developed FEA models in Abaqus to simulate dynamic pad–wafer contact and wear distribution, evaluating pad geometries and material properties to address uneven pad wear and wafer non-uniformity.
- Developed prototypes, validated simulation results through cleanroom testing, and analyzed test data in JMP to identify performance trends and guide design improvements.

Mechanical Engineer, FE Solutions, India **Jan 2022 – Aug 2022**

- Delivered mechanical design and CAE consulting support for gas delivery systems, automotive crash simulations, FANUC robotic structures, pressure vessels, turbines, and wastewater treatment equipment.
- Performed finite element analyses of gas delivery systems, pressure vessels, and associated components to evaluate stress, deformation, and structural integrity under pressure and mechanical loads, recommending design improvements to address critical regions.
- Prepared technical reports and presented simulation findings in design reviews, supporting client decisions on design modifications and structural performance.

EDUCATION

MS in Mechanical Engineering, University of Illinois at Chicago **Aug 2022 - Aug 2024**

BS in Mechanical Engineering, University of Pune **Aug 2017 - July 2021**