Sidhaant Rishi

MSc. Computer Aided Mechanical Engineering

Contact Information:
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Date of Birth: 09.04.1996
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Professional Summary

MSc graduate in Computer-Aided Mechanical Engineering with 2.5+ years of experience in NVH simulation, structural dynamics, and machine learning applications for mechanical systems. Skilled in modal analysis, FEA, predictive modeling, and engineering automation. Proficient in Python, Abaqus, Ansys, MATLAB, and CAD tools. Proven record of improving drivetrain NVH performance and developing data-driven maintenance solutions.

Professional Experience

Student Research Assistant **03/2023 – 07/2025**

Institute for Machine Elements and Systems Engineering, RWTH Aachen University, Germany

- Conducted meshing and modal analysis of electric drive components in Abaqus for structural dynamic simulations.
- Converted elastomeric coupling model from MATLAB to Python; improved runtime by 82%.
- Updated clutch adapter CAD models for multi-configuration compatibility.
- Developed ML-based health monitoring models for coolant pumps (75%+ anomaly detection, 85%+ RUL accuracy).
- Performed Data collection of acceleration vs time data on the test bench for ML-based health monitoring of coolant pump

Application Engineer **07/2018 – 11/2020**

Larsen and Toubro Ltd, India

- Conducted on-site performance assessments of heavy machinery at mining operations; collected and analyzed operational data to optimize machine efficiency and ensure maximum performance for clients.
- Solved a fuel efficiency issue in 60-ton dump trucks, reducing fuel consumption by 15%.

Education

Master of Science (M.Sc.) **10/2021 – 05/2025**

Computer Aided Mechanical Engineering, RWTH Aachen University, Germany
Overall Grade: 1.8
Focus: Structural Dynamics, NVH Simulation, Machine Learning for Mechanical Systems
Master's Thesis: Identification of critical design features to enhance NVH performance of electrified powertrain housings
Thesis Grade: 1.0

Bachelor of Technology (B.Tech.) **08/2014 – 05/2018**

Automobile Engineering, SRM Institute of Science and Technology, India

Overall Grade: 8.9/10 (approx. 1.6 German Scale)

Focus: Transmission Development, Material Science, Automotive Engines, Vehicle Dynamics

Skills & Competencies

Software: Abaqus, Ansys, Python, MATLAB, Inventor, Fusion 360, PAK

Technical: Noise,Vibration and Harshness Optimization, Modal Analysis, FEM, Structural Dynamics, Topology Optimization, Sensitivity Analysis, Machine Learning, Multibody Simulation, System Health Monitoring, Signal Processing

Languages: English (C1), Hindi (Native), German (A2 Expected B1 by Jan 2026)

Soft skills:

- Demonstrated strong teamwork by effectively collaborating across cross-functional teams, including engineering, service, and customer groups
- Problem Solving based on data analysis
- Independent handling of complex technical projects
- Demonstrated strong reliability by consistently meeting deadlines and delivering high-quality results in dynamic work environments.

Additional Qualifications

Internships:

- Manufacturing Engineering Intern — Bajaj Auto Ltd (06/2017 – 07/2017)
- Vehicle Inspection Intern — Maruti Suzuki India Ltd, Gurgaon (06/2016 – 07/2016)

Awards:

- Winner, 2nd PIFEM Marathon — Optimized chipset design using thermal stress analysis and neural networks, reducing costs by 82%.
- Best Performance Award — Mining Equipment Business, Larsen & Toubro.

Projects:

- **Research Project:** NVH sensitivity analysis of an electrical motor using eFAST & Morris Method — Grade 1.7
- Bicycle Tire Pressure Estimation using ANN classifier — Grade 1.7
- Angular Position Prediction of a Damped Pendulum using Physics-Informed Neural Network — Grade 1.3