

# SHIKHAR KUMAR

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## OBJECTIVE

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Seeking a Mechanical Engineer role to apply my engineering knowledge, embrace learning opportunities, and develop practical industry skills.

## SUMMARY

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Master's in Engineering Design graduate from KTH with practical experience in mechanical design, CAD, and FEA. Completed an industry-led thesis at Scania, focusing on sustainable battery frame development for heavy electric trucks. Demonstrated ability in cross-functional collaboration, procurement, and material validation. Committed to driving innovation in lightweight structures and sustainable mobility solutions.

## EDUCATION

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### Master's in Engineering Design

Aug 2021 – Mar 2025

KTH Royal Institute of Technology, Stockholm Specialization: Machine Design

Master's Thesis: *"Alternative Materials to the Battery Frames"* ([Available in DiVA Portal](#))

In collaboration with Scania CV AB

### B.Tech in Mechanical Engineering

Jul 2016 – Jun 2020

SRM Institute of Science and Technology, India

## SKILLS

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CAD Tools: CATIA V5, Solid Edge, SolidWorks, CREO, NX, Inventor, AutoCAD, Fusion 360

Simulation Tools: Ansys Fluent, Ansys Mechanical, MSC Adams, COMSOL, Abaqus

Programming: MATLAB, Python

PLM / Business Tools: MS Office, Enovia, Teamcenter, Windchill

Manufacturing / Analysis: Ansys Granta Edupack, GD&T, 3D Printing / Additive Manufacturing, Minitab (statistical analysis), Six Sigma / Lean Principles

Soft Skills: Collaboration, Communication, Problem-solving, Initiative, Cross-functional Teamwork

## EXPERIENCE

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### Master Thesis Student

Jul 2023 – Oct 2024

Scania CV AB, Södertälje, Sweden

- Developed alternative materials for EV battery housing, achieving 32.73% weight reduction through FEA simulations and CAD design.
- Led material procurement, testing, and validation, demonstrating a 45% increase in energy absorption with alternative materials, enhancing crashworthiness and durability.
- Validated alternative materials, boosting strength-to-weight ratio by 25%, ensuring scalability and performance.

### Mechanical Design Engineer

Aug 2020 – Jul 2021

Forze3D Pvt. Ltd, Visakhapatnam, India

- Engineered chassis and wheel designs that enhanced structural strength while reducing overall weight, improving vehicle efficiency.

- Optimized material selection and geometry to achieve a lighter yet more durable design, balancing performance and manufacturability.

### Summer Intern

May 2018 – Jul 2018

Hindustan Aeronautics Limited, Kanpur, India

- Developed a working understanding of 5-axis CNC machining for aviation parts.
- Observed the assembly process of the Dornier-228 aircraft.

## PROJECTS

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### Bi-directional Gearbox Internal Lubrication Pump

Jan 2022 – Dec 2022

Group project at KTH with Cascade Drives

- Designed an internal lubrication pump for an EMA gearbox.
- Collaborated effectively with team members to develop a pre-lubrication concept.

### Experimental and Computational Analysis on NACA 0012 Hydrofoil

Jan 2020 – Jun 2020

Bachelors Thesis

- Fabricated NACA 0012 hydrofoil and conducted low-speed water tunnel tests.
- Compared K-epsilon and K-omega turbulence models, concluding higher efficiency with K-omega.

## LANGUAGES

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English (Fluent)      Hindi (Native)      Swedish (Beginner)

## RELEVANT COURSES

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Machine Design, Tribology, Systems Engineering, Robust and Probabilistic Design, Circular Manufacturing

## CERTIFICATES

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- Online Internship Program on Vehicle Dynamics – FMAE
- Modelling and Design for Mechanical Engineers with Autodesk Fusion 360 – Autodesk, Coursera
- Python for Everybody – University of Michigan, Coursera
- Introduction to GUI-based CFD using ANSYS Fluent – SKILL-LYNC

## EXTRACURRICULAR ACTIVITIES

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- **Photography:** Google Maps Local Guide contributor with a 500px portfolio; skilled in Adobe Lightroom and Photoshop.
- **Volunteering:** Supported school festivals; stage setup volunteer for Lollapalooza and event volunteer for SNNC 2023.
- **Travel:** Visited multiple countries to experience diverse cultures.
- **Sports:** Active interest in football, cricket, and badminton.
- **Part-Time Employment:** Velove – delivered packages in Stockholm using four-wheeled electric cargo bikes.

## REFERENCES

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Available upon request.