

KOLLIPARA HEMANTH

About me:

A dedicated graduate with passion to work in the field of Mechanical Engineering seeking an entry level opportunity with an esteemed organization where I can utilize my skills and enhance learning in the field of work.

• EDUCATION AND TRAINING

2020 – 2023 Rome, Italy

MASTERS IN MECHANICAL ENGINEERING Sapienza University di Roma - 87/110

2015 – 2019 Bhimavaram, India

MECHANICAL ENGINEERING BACHELOR'S Vishnu Institute of Technology - 70.7%

• WORK EXPERIENCES

During my bachelor's at Vishnu Institute of Technology, I worked as mechanical engineer in the **TEAM KRONOS**, in charge of many roles during the years. The aim of the team is to design, perform analysis and fabricate Go-kart and Human driven All-terrain vehicles.

Design Engineer

Year: 2017-2019
Team of 25 persons

I was the key design engineer for our Go karts. We have designed and fabricated 4 go karts in total. Two of them with side engine mounts and two of them are rear engine mounts. I worked on software like CATIA, SolidWorks and the analysis was done using ANSYS.

Head Of Suspension Department

Year: 2019
Team of 50 persons

The goal was to design a suspension system for a human driven All-Terrain vehicle. The objective was to maintain the maximum traction throughout the track by maintaining continuous contact between road and tires. The hard point pickup process was done using LOTUS software.

Chassis Design Engineer

Year: 2018
Team of 30 persons

The goal was to design a Go-kart for a competition called Sieger Pro karting competition. The whole design was done in CATIA software and stress analysis was performed in ANSYS workbench. In the end fracture points were identified and additional material was added to avoid failure.

Transmission Engineer

Year: 2017
Team of 25 persons

The goal was to calculate an efficient drivetrain for the go kart. The transmission efficiency was calculated using the power unit and torque developed at the shaft. By using the torque, we calculated

the shaft dimensions with specified factor of safety.

**Chairperson For
Society Of Automotive
Club**

Elected in the year: 2018

I was elected as chairperson for the Society of automotive club. My role was to select team members and divide them into groups. In total I have interviewed 60 students and selected 25 students as key members for the 2019 SAE BAJA competition.

DIGITAL SKILLS

Mechanical software's

CAD: Geomagic Freeform, CATIA, Solid Edge, SolidWorks, Fusion 360.

CAE: Altair HyperWorks (HYPERMESH), Ansys, Ansys CFD.

CAM: Camotics, Visual CAD/CAM, GrabCAD print.

Programming Languages: Wolfram Mathematica, MATLAB, C, C++, C# Programming, Python.

Office skills: Microsoft Excel, Microsoft Word, Microsoft PowerPoint.

MECHANICAL ENGINEERING PROJECTS

Investigating The Usage of The Touch Haptic Device as a Tool For Free Form Design (Master's final thesis - 2023)

To explore the concept of haptic device and design a car seat using a TOUCH 3D haptic device. By taking maximum dimensions the seat was designed and a later tangency test was performed using zebra pattern in Solid Edge. All the experimental activities were performed using haptic devices and traditional mouse was not used.

Topology optimization of a shower caddy (Project carried out in Advanced methods in mechanical design – 2021/2022)

To design a shower caddy for household purposes and perform topology optimization. The given object was meshed in ALTAIR Hyper works. The stress concentrating regions were identified, and further topology was performed by minimizing the weighted compliance and keeping the volume fraction unaltered.

Perform curvature, porcupine, and zebra analysis on a bicycle seat. (Project carries out in Advanced methods in Mechanical design – 2021/2022)

A set of three-dimensional points were used to create the geometry of the seat. Joining all the points together using a 3d spline makes the skeleton of the seat, the surface is filled by using fill and multi section surface options in CATIA. After that, to find the tangency porcupine analysis (CATIA) and ZEBRA analysis in SOLID EDGE was done.

Parametric Design and Family of parts (Project carried out in Advanced Methods in Mechanical design-2021/2022)

To design 4 types of stools in SOLID EDGE and differentiate them using Family of Parts and parametrization. The dimensions are taken from the appendix that consists of average height and weight of both men and women grouped according to their age. Each stool has unique prerequisite that should be fulfilled, innovative features were also added for much more ergonomic design than a regular one.

Fabrication of a component by Fused Deposition Modeling process (Project carried out in Additive manufacturing course – 2021/2022)

The goal was to print a given object by using a fused deposition modeling process. The output is based on the processing parameters which were calculated from feed rate, cutting velocity and rpm of tool. I calculated the time and number of parts that can be manufactured on the same machine table.

Reverse Engineering through structured light (Project carried out in Additive manufacturing course – 2021/2022)

To describe and compare the modeled virtual object by Reverse Engineering with the original CAD Model. To find different defects like patches, holes, additional surfaces that occur during RE process and counter these defects using GOM software.

Design and fabrication of human driven All-terrain vehicle (ATV) (Project carried out in Bachelor's-2019)

Our goal is to design and fabricate an all-terrain human driven all-terrain vehicle for a competition called BAJA conducted by the Society of Automotive engineers. We worked on this project for 6 months and we have submitted the reports to the associate judging panel.

Design and analysis of wind turbine blades (Bachelor's final thesis - 2019)

To design and perform analysis on windmill blades, design was done by using Solid works and analysis was performed in Ansys CFD. The model was meshed in Ansys. Later a region was created to create a virtual wind tunnel. The goal was to find the optimum blade angle for different wind angles which was inlet and outlet to be known as coefficient of drag and coefficient of lift.

To design and Fabricate an All-Terrain Bot (Bachelors Mini project - 2019)

The goal was to design and fabricate all terrain bot that can outrun in all terrains and still function equivalently as before. The test was performed using mud, sand, rocks and fire. An optimal belt drive was chosen to fit the bot and it was made with the least dimensions possible. The bot was made to get back on to its wheels without any additional mechanisms.

LANGUAGE SKILLS

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Production	Interaction	
ITALIAN	A2	A2	A2	A2	A2
GERMAN	A2	A2	A2	A2	A2
ENGLISH	C2	C2	C2	C2	C2
HINDI	C2	C2	C2	C2	C2

Place and Date: 09/11/2023

Signature:

