RAKSHITAA GEETHA MOHAN

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EDUCATION:

NATIONAL INSTITUTE OF TECHNOLOGY-TIRUCHIRAPPALLI *Tiruchirappalli, India*

- B.Tech in Mechanical Engineering *July 2015 – July 2019*
- Cumulative Grade Point Average (CGPA): **3.54/4**

CLEMSON UNIVERSITY – INTERNATIONAL CENTER FOR AUTOMOTIVE RESEARCH *Greenville, South Carolina, USA August 2019- August 2021*

- Master of Science in Automotive Engineering - CGPA:**3.66/4** (One semester)

RESEARCH PROJECTS

Improving efficiency of Cooling plates of Electric Vehicle batteries *National Institute of Technology -Trichy*
Guide: Dr. P.Kaushik *November 2018 – Present*

- Objective: To optimize the geometry of the cooling plates by varying the boundary conditions in order to improve the efficiency.

Experimenting the effects of using Sodium Nitrate as a Phase Changing material in a Catalytic Convertor *National Institute of Technology - Trichy November 2018 – Present*

- Objective: To study the heat holding capacity and related characteristics of Sodium Nitrate in the Catalytic convertor of an engine

Experimental Investigation of Evaporation Kinetics and Coffee Ring formation of colloidal dispersion of droplets on porous substrates *Technische Universität Darmstadt, Germany May 2018 – July 2018*
Guide : Apl.Prof.Dr.Sc.Tatiana Gambaryan-Roisman

- This was an experiment-based Research Project undertaken to observe the various parameters influencing the Coffee Ring Formation
- The Experiments were conducted in a controlled environment in which pressure, temperature and humidity were maintained at a constant level. A high quality camera was used to capture the phenomenon at the rate of 1 frame per 4 seconds. An electronic Mass Balance was used to record the change in mass. MATLAB and IMAGEJ were used to handle data and to ascertain the wetted diameter change.
- A mathematical relationship between the Wetted diameter and Mass was established, and the same was verified with theoretically obtained results. By varying other factors like, concentration of the liquid (WE18) and shapes of areas of exposures, the observations were recorded and compared with water and WE15.

Vehicle Prototyping *Indian Institute of Technology- Madras*
Guide : Prof. C.S.Shankar Ram *May 2017 – July 2017*

- The project dealt with checking the stability (Pitching and Rolling conditions) of Heavy Commercial Vehicles (HCVs) when applying brakes.
- The Governing Equations of a HCV were framed. The values for related variables of different trucks and buses were obtained from TRUCKSIM (a software) by giving it a reference acceleration ($2m/s^2$) and deceleration ($2m/s^2$). MATLAB was then used to form the Correlation Matrix using which the Independent Variables were found. BUCKINGHAM's PI THEOREM was used to form non-dimensionalised variables, and the vehicle parameters were scaled down.
- A model was generated using SOLIDWORKS. Prototype was made and motors were used to accelerate and also to provide the braking profile obtained from HCVs. ARDUINO IDE was used to control the speed of the motor.
- The prototype was tested on a friction surface (with a friction coefficient of 0.8) and the observations were recorded.

PROFESSIONAL TRAINING

In – Plant Training at HYUNDAI MOTORS, Chennai, India

- Learnt about the functions of various departments involved in the Manufacturing of a Commercial vehicle and also about the types of engine, processes and materials used in manufacturing of the same; subsystem assembling; the roles of robots, jigs, fixtures and also employees, vehicle inspection and testing.

Training at NATIONAL INSTITUTE OF TECHNOLOGY – TRICHY

- Took Special Training from **Dr.T.Suthakar** on materials and processes involved in manufacturing of automobiles

PROFESSIONAL SKILLS

- **Programming:** C, C++, MATLAB
- **Softwares:** Proficient in modelling using CREO Parametric, SOLIDWORKS, Autodesk's Fusion 360.Worked with SIMULINK, ANSYS Workbench, TRUCKSIM, ImageJ and MS-Excel.
- **Certificates:** A1 level Certificate for **German** language proficiency from Goethe Institute.
  Participated in an Automobile Workshop conducted by PSI RACING CLUB (BAJA Team) of NIT-Trichy, in which around 100 students participated.