



GUNDETI SRIVARDHAN

Roll No.:210103130

B.Tech - Mechanical Engineering

Indian Institute Of Technology, Guwahati

+91-9494625295

gundetisrivardhan@gmail.com*

s.gundeti@iitg.ac.in*

Website* | LinkedIn*

* Hyperlinked text / Clickable link

EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Indian Institute of Technology, Guwahati	7.79 (Current)	2021-Present
Senior Secondary	TSBIE BOARD	97.4%	2021
Secondary	CBSE BOARD	89.2%	2019

EXPERIENCE

- Battery Design & Analysis Lab (BDAL)** May. 2024 - Aug. 2024
Research Intern (LOR)* Huazhong University of Science and Technology, China
 - Inspired by the **herringbone structure** of fish skeletons, optimized by nature over millions of years, designed a **cooling plate** using **topology optimization**. Achieved a **T max drop** of **1.02°C**, a **45.41%** reduction in **pressure drop** and a **32.46%** reduction in **material usage** compared to **conventional designs**, resulting in **reduced production costs** and **increased cooling plate efficiency**.
 - Improved energy efficiency by **reducing parasitic power consumption** by **45.41%**, outperforming traditional designs across **all flow rates**, while matching the performance of double-outlet designs with a **simpler system architecture**.
 - Performed topology optimization in **COMSOL** by setting design parameters and boundary conditions, using the **MMA method** to obtain the final 2D result. The 3D geometry was then created in **SolidWorks**, followed by **Computational Fluid Analysis** in **ANSYS** to obtain the final results.
 - Submitted my research findings for publication in a **reputed journal**, highlighting **significant contributions** to the field of **thermal management in lithium-ion batteries**.
 - Recieved a **Letter of Recommendation (LOR*)** from the professor for achieving excellent results and demonstrating exceptional diligence, responsibility, and hard work during my research internship.

PROJECTS

- Chatter Prediction Using Image Processing** Jan. 2024 - May. 2024
Project under Professor, R. K. Mittal, Dept.of.Mech engg,IITG. [ME 623 course] Report*
 - Developed a **Sequential Convolutional Neural Network (CNN)** model in **TensorFlow** to classify a dataset of 91 pairs of **machined surface images** as **Chatter** or **Chatter-free**, achieving **100%** training accuracy and **71%** test accuracy.
 - Targeted **real-time chatter prediction** by planning the integration of high **FPS cameras**, enhancing the model's applicability for **practical machining environments** and aiming to **increase accuracy** to over **95%**.
 - Employed **OpenCV**, **PIL**, and **Numpy** to convert **DSLR-captured** images into **CSV** format for training, ensuring **high-quality** input data for **accurate predictions**.
- Optimizing Charging Time of EV's** Jan. 2024 - May. 2024
Project under Professor, Dr. Poonam Kumari, Dept.of.Mech engg,IITG. [ME322 course] Report*
 - Developed a battery charging solution using **MOSFETs** & **IGBTs**, reducing EV charging time by **66%** through a **three-section** battery design. Achieved a **25% cost reduction** via market analysis.
 - Designed a **dual-cooling** mechanism with coolant as **PCM**, using **0.6 mm hollow fins** for better circulation. Implemented multi-layer **PTFE** insulation to improve **heat transfer** and **safety**.
 - Proposed a novel **EV charging network** along **major highways** in India by partnering with Dhaba owners, **enhancing accessibility** for long-distance travel.

TECHNICAL SKILLS

- Engineering Software:** COMSOL, ANSYS, LINKAGE, MATLAB"
- CAD and CAM:** SOLID WORKS, CATIA, SOLID EDGE
- Programming Languages:** C/C++, Python"
- Others:** Numpy, Pandas, Team Management, WhiteBoard Animation " Elementary proficiency

KEY COURSES TAKEN

- | | | |
|--|------------------------------|-----------------------|
| • Optimization Methods in Engineering | • Manufacturing Technology | • Solid Mechanics |
| • Fundamentals of Artificial Intelligence | • Heat Transfer | • Modern Control |
| • Dynamics of Machining Processes | • Design of Machine Elements | • Electrical Machines |
| • Industrial Engineering and Operations Reseach. | • Mechanical Measurements | • Fluid Mechanics |

POSITIONS OF RESPONSIBILITY

- Core Team**, TechExpo, Techniche, IIT Guwahati Dec. 2022 - Sep. 2023
- POC - Smart Assistant**, Robotics Club, IIT Guwahati Nov. 2022 - Apr. 2023

ACHIEVEMENTS

- Student Intern** under Rastriya Avishkar Abhiyan ,LEARNHILL TECHNOLOGIES PRIVATE LIMITED 2024
- National Level Player**, Vall Veechu (Sword Fight), SCHOOL GAMES FEDERATION OF INDIA (SGFI) 2019