Akaash S S

Roll No.:230103009
B.Tech - Mechanical Engineering
Minor in Electronics and Communication Engineering
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Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Indian Institute of Technology, Guwahati	8.38 (Current)	2023-Present
B.Tech. Minor	Indian Institute of Technology, Guwahati	9.5 (Current)	2024-Present
Senior Secondary	CBSE Board	95.2%	2022
Secondary	CBSE Board	93.5%	2020

Projects

- **Motor Cooling System Design** *Jan. 2025 - Feb. 2025*
  Kriti'25, Barak Hostel, IIT Guwahati GitHub
  * **Led a team of 5** in designing a liquid cooling system for an FSEV (EMRAX 208 & BAMOCAR-D3) to handle a **peak heat load of 10 kW** and maintain temperatures below the specified **45°C under dynamic conditions.**
  * Implemented a **control strategy** in Simscape that dynamically regulated fan and pump speeds, achieving up to **22% power savings** during high-load operation.
- **Design of Aerodynamic Package for Formula Student Electric Vehicle** *Mar. 2024 - Mar. 2025*
  Society of Automotive Engineers, Automobile Club, IIT Guwahati Report
  * Co-designed **rear wing, front wing, and nose cone** in **SolidWorks**; validated aerodynamic performance via **CFD and composite stress analysis** using **ANSYS Fluent and ACP**.
  * Collaborated in **fabrication of the nose cone** using **glass fiber–epoxy layup**, optimizing strength-to-weight ratio.
- **Delta Robot Kinematic Modeling** *Mar. 2025 - May. 2025*
  Group Project Report
  * Designed a pick-and-place Delta Robot in **SolidWorks** and developed a **MATLAB script** to compute Cartesian positions from arm angles (**forward kinematics**) and arm angles from Cartesian coordinates (**inverse kinematics**).
  * Implemented forward kinematics in MATLAB to analyze and validate the **workspace of a Delta robot.**

Technical Skills

- **Programming**: MATLAB, Python, LaTeX
- **CAD**: SolidWorks, Fusion 360, Solid Edge
- **Simulation & Analysis**: ANSYS Mechanical, ANSYS Fluent, ANSYS ACP*, Simulink, Simscape, Autodesk CFD, IPG CarMaker

** Elementary proficiency*

Key courses taken

- **Mechanical**: Fluid Mechanics, Solid Mechanics, Thermodynamics, Kinematics of Machinery, Material Science, Manufacturing Technology, Heat Transfer*
- **Electrical**: Analog Circuits, Digital Circuits, Electromagnetic Field Theory*
- **Mathematics**: Linear Algebra, Basic Calculus, ODE, PDE

** Course for the upcoming semester*

Positions of Responsibility

- **Overall Coordinator**, Automobile Club, IIT Guwahati *Apr. 2025 - Present*
  * Leading a **60+ member team** in building IITG Racing's first **Formula Student EV**, coordinating 7 subsystems for timely integration and technical alignment.
  * Coordinated efforts between technical and managerial teams to align project goals and timelines, while overseeing recruitment, event planning, sponsorships, and financial management.

Achievements

- **Motor Cooling System Design:** Secured **2nd Position** in the PS at Kriti '25, Inter-Hostel Tech Competition. *2025*
- **Academic Achievements:** Ranked **8th** among 119 students in Mechanical Engineering, IIT Guwahati. *2025*
- **Supra SAEINDIA:** Represented IIT Guwahati at the national Formula Student competition held at BIC. *2024*
- **JEE Advanced:** Secured **All India Rank 9150** among 1.8 lakh+ candidates nationwide. *2023*
- **JEE Mains:** Secured **All India Rank 9756** among 1 million+ candidates nationwide. *2023*

Extracurricular

- **Virtual EV Challenge:** Led IIT Guwahati's 5-member team in EV control strategy development. *2025*
- **NCC IITG:** Active NCC member at IIT Guwahati participating in various activities.