GAURI WADHWA

gauri2k.iitkgp@gmail.com
(+91)-8130305647

EDUCATION

B.Tech in Aerospace Engineering *July 2018-2022*
Indian Institute of Technology Kharagpur CGPA: 8.59/10

All India Senior School Certificate Examination(CBSE) *March 2018*
Delhi Public School,R.K. Puram 95.8/100

All India Secondary School Examination(CBSE) *March 2016*
Holy Child Auxilium School CGPA: 10/10

PROJECTS

Hyperloop Pod Design Optimization *January 2020 - present*
Prof. Sandeep Saha, Department of Aerospace Engineering, IIT Kharagpur

- Working on integration of a pulsed jet actuator for drag reduction.
- Constructed a bladeless fan model to study pulsed jets and compare with steady blowing.

Box Wing Glider Design and Optimization *September 2020 - present*
Prof. Sandeep Saha, Department of Aerospace Engineering, IIT Kharagpur

- Literature review of study on box wing aircraft design and optimization.
- Compared the aerodynamic performance of a boxwing with a conventional wing for MAVs using simulation in SU2.
- Analyzed the change in flow over a box wing with change in aspect ratio,taper ratio and inclination of the winglet.

Design of an Automatic Car Sanitizer *May-August 2020*
Prof. Sandeep Saha, Department of Aerospace Engineering, IIT Kharagpur

- Studied viscous flow in ducts and calculated the pump and nozzle specifications for a required flow rate. Implemented a 2DOF system using servo motors and pan and tilt assembly controlled by an Arduino Uno.
- Prototyped the device, tested its performance in a car and compared it with collected survey data. Reduced the sanitization time from conventional 5-7 minutes to less than 10 seconds.
- Studied the effectiveness of virtual design projects and proposed a one-to-one coaching methodology for design education for Industry 4.0.

Embedded Electronics and Controls Team *March 2019-Present*
Kharagpur RoboSoccer Students' Group, IIT Kharagpur

- Qualified for RoboCup Small Size League 2020, Bordeaux (postponed due to Covid-19)
- Calculated the optimal gate resistance for the IR4427 based motor driver to reduce the switching time.
- Implemented the circuit for a dedicated motor driver based on MC33035 with companion IC MC33039. Improvements include lower current usage, lower switching time and considerably lower noise.

PUBLICATION

KgpKubs 2020 Team Description Paper *March 2020*
Robocup Small Sized League

COMPETITIONS

Participating in AIAA Engine Design Competition 2021 *Ongoing*

- Working on the design of a compressor for a supersonic turbofan engine.

Secured Gold in DIC's Terrace Farming Robot Challenge in Inter IIT Tech Meet 2019 *December 2019*

- Integrated the data from 1D Lidar, IMU, thermal camera and soil moisture sensor using ROS.
- Implemented a PID Controller using IMU data as feedback for climbing motion and pure pursuit controller using 1D lidar data as feedback for straight line motion of the bot and manual controller for emergency cases.

SKILLS

Programming Languages : C++, C, Fortran, Embedded C
Softwares and Skills : Ansys Fluent, SU2, Pointwise, Solidworks, MATLAB, OpenVSP, Robot Operating System(ROS), Eagle, LT-Spice, Adobe Photoshop, Adobe Premiere Pro, Adobe Lightroom

COURSEWORK

Computational Fluid Dynamics
Low Speed Aerodynamics
High Speed Aerodynamics
Numerical Solution of Ordinary and Partial Differential Equation
Mechanics of Flight
High Performance Computing and its Application in Physical Systems
Thermodynamics and Aerospace Propulsion System
Programming and Data Structures