



## EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2019	M.TECH Dual Degree 5Y	IIT Kharagpur	7.01 / 10
2015	AISSCE, CBSE	Central Hindu Boys' School (B.H.U.)	87.8%
2013	AISSE, CBSE	Central Hindu Boys' School (B.H.U.)	9.8 / 10

## INTERNSHIPS

Summer Trainee | Zeus Numerix Pvt. Ltd., Pune [May 2019 - July 2019]

"Development of Multi-species capability for Compressible Navier Stokes Solver"

- Studied the **working** of the compressible Navier Stokes Solver written in C++ Programming Language based on OOP concept
- Developed an uncoupled N equation based **Multi-species capability** with implementing First-Order upwind spatial discretization and, explicit Runge-Kutta scheme and implicit LU-SGS scheme for temporal discretization of the flow domain
- Performed **nozzle plume** simulation of non-reacting multi species/component gaseous exhaust in compressible flow regime

Summer Training | Integrated Test Range, Chandipur | DRDO [May 2018 - July 2018]

"Six - Degree of Freedom Simulation of Ballistic Trajectory" under the guidance of Dr. (Mrs.) Shrabani Ghosh

- Learnt about different kinds of **ballistic and cruise vehicles** and technology used in **testing** those vehicles
- Designed a Six - Degree of Freedom simulation program using MATLAB to **predict trajectory** of ballistic vehicle for given initial conditions, aerodynamic characteristic, fuel properties and number of stages of the vehicle using Euler's method
- Simulated the **effect of staging** on the ballistic trajectory and validated the results using theoretical models and open data

## PROJECTS

B. Tech. Project | IIT Kharagpur [May 2018 - April 2019]

"Study of Flat Plate Transition in High Speed flow" under the guidance of Prof. Akshay Prakash

- Performed a **literature survey** for different models of flow transition onset prediction and Langtry-Menter Transition Model
- Used the Langtry-Menter Model in ANSYS CFX to simulate the **flow transition** on flat plate in ERCOFTAC T3A and T3B cases

Design Project | Aerodynamic Characteristics of Delta Wing [July 2017 - November 2017]

"Effect of Change in Apex angle of Delta Wing on its Aerodynamic characteristics" under Prof. Sandeep Saha

- Used ANSYS Fluent to simulate delta wings of different **apex angles** with same chord length at different **angle of attack**
- Plotted **lift** coefficient and **drag** coefficient of the wings, and analysed the graph to determine wing with highest lift and stall
- **Fabricated** wings with desired Lift and stall characteristics and performed **wind tunnel testing** to validate the simulated data
- Performed smoke flow visualisation to analyse the effect of Angle of Attack on **Vortex breakdown** over different delta wings

Summer Project | IIT Kharagpur [May 2017- July 2017]

"ARM Based Smart Interactive Notice board" under the guidance of Prof. Anup Ghosh

- Developed a **module** for displaying seminars and notices to be held on any console screen with HDMI port using Raspberry Pi
- Developed a **web interface** to take input of information over internet and store it locally, used Python to process the stored information, functions of OpenCV to create images based on stored data and displayed them in a specified time interval

## COURSEWORK INFORMATION

**Aerospace Engineering:** Introduction to CFD | Advanced CFD | Unsteady Aerodynamics | Advanced Gas Dynamics | Introduction to Turbulence | Stability of Flows | Viscous Flow Theory | High Speed Aerodynamics | Low speed Aerodynamics | Basic courses on Aerodynamics | Propulsions | Structures | Stability and Controls

**Mathematics:** Numerical Solution of ODE and PDE | Transform Calculus

**Computer Science:** Foundations of Machine Learning | Programming and Data Structures

## POSITIONS OF RESPONSIBILITY

General Secretary | Aerospace Engineering Society [July 2017 - April 2018]

- **Recruited** and led a team of four secretaries to **organise** social events, workshops and expert talks
- Organised various social events like Freshers Welcome, Sports Meet and Annual Farewell for Aerospace engineering students
- Organised **workshops** on ANSYS Fluent, MATLAB and Aeromodelling for First and Second year Undergraduate students

Secretary | Aerospace Engineering Society [August 2016 - April 2017]

- Coordinated in organisation of social events viz Freshers' welcome, Alumni visit, Sports meet and Annual Farewell
- **Responsible** for society annual membership collection and overall financial management for the academic year 2016 - 2017

## SKILLS AND EXPERTISE

**Software & Packages:** C, C++, Python, ANSYS Fluent, ANSYS CFX, Solidworks, MATLAB, OpenFOAM, FORTRAN

## EXTRA CURRICULAR ACTIVITIES

- Member of the Inter-hall Silver winning Advertisement design team at General Championship, IIT Kharagpur 2016-17
- Participated in Boeing IIT National Aeromodelling Competition in Kshitij 2017, held in IIT Kharagpur
- Member of Set-Management Team of Inter-hall Dramatics at the Social and Cultural General Championship 2016-17