Raghav Gupta

Postgraduate(M.Tech,Aero-Thermodynamics and Thermal Sciences)
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 Pushkin-Kumar | in Raghav-Gupta

ACADEMIC QUALIFICATIONS

Year	Degree/Certificate	Institute	CPI/%
2022 - Present	Master Of Technology	Indian Institute of Technology, Kanpur	8.14/10
2015-2019	Bachelor of Technology	Indian Institute of Information Technology Design and Manufacturing, Jabalpur	6.6/10
2013	Higher Secondary(XII)	Shri Gopal Inter College,Auraiya	89.2%
2011	Secondary(X)	Shri Gopal Inter College,Auraiya	79.16%

ACADEMIC ACHIEVEMENTS

- Secured a AIR of **1159** with a score of 689 in **GATE 2022** .
- Successfully qualified 2nd round of Snackdown 2017 and secure 3887 rank in Pre-Elimination Round
- qualify for the award of Scholarship for Higher Education (SHE) under Innovation in Science Pursuit for Inspired Research (INSPIRE) by virtue of performance within the top 1 of the School Board at Class XII level in the examination held during the academic session ending March/April 2013.

INDUSTRIAL TRAINING

- **Central Tool Room and Training Centre, Bhubaneswar** (*1 June 2017- 30 June 2017*)
  - At CTTC Bhubaneswar, I learnt different Machining processes and NC,CNC Programming.
- **High Performance Computing and Parallel Programming, IIT Kanpur** (*27 July 2023- 29 July 2023*)
  - Participated in a 2 day workshop on high-performance computing (OpenMP/MPI/GPU Parallel Programming) through theory and hands-on sessions

ACADEMIC PROJECTS

- **Master's Thesis :Numerical Study of High Speed Low Pressure Turbine Cascade Flow with Shocks** (*Ongoing*)
  Mentor: Dr Rajesh Ranjan, Department of Aerospace Engineering, IIT Kanpur.
    Analyzing the behavior of flow over a high-speed and low-pressure turbine blade cascade with the appropriate boundary condition and turbulence Model.
- **B.Tech Project : Automated WheelChair** (*January 18-April 18*)
  Mentor: Dr Puneet Tandon, Department of Mechanical Engineering, IIIT Jabalpur.
    This project employs an Android phone and Bluetooth to transmit commands to a wheelchair, enabling efficient direction control via IR sensor and DC motors. This system enhances mobility in tight spaces and aids users in navigating ramps and doorways.

TERM PROJECTS

- **Velocity Profile Validation in Plane Poiseuille Flow** (*January 23-May 23*)
  Mentor: Dr Rajesh Ranjan , Department of Aerospace Engineering, IIT Kanpur
    incompressible, unidirectional Navier-Stokes equations were solved numerically by the explicit finite difference method and Numerical results were compared with analytical solutions to assess the accuracy of discretization schemes.

- **Design the Thermal Protection System** (*January 23-May 23*)
  Mentor: Dr Rakesh Kumar Mathpal , Department of Aerospace Engineering, IIT Kanpur
    Develop an explicit Finite Difference code to design a thermal protection system (TPS) for a base plate which subjected to varying heat flux over a time. The goal is to determine the TPS thickness, and thermal behavior of the material subjected to melting and weight constraints.

- **Analysis of Turbulence Statistics for Experimental PIV Dataset** (*January 23-May 23*)
  Mentor: Dr Alakesh Mandal, Department of Aerospace Engineering, IIT Kanpur
    MATLAB code analyzed PIV and hot-wire data, calculating correlation functions and integral time scale. Reynolds stress line plots and spatial correlations were generated via Ensemble averaging, depicting eddy sizes and correlations effectively.

- **Analysis of Supersonic Flow in Convergent-Divergent Nozzle with Variable Radius** (*January 23-May 23*)
  Mentor: Dr Pradeep Moise, Department of Aerospace Engineering, IIT Kanpur
    Analyze and compare the Mach number and pressure variations for different conditions(observation of shocks at different locations) and compute downstream flow features for atmospheric ambient pressure.

SELF PROJECTS

- **Movie recommender system**
    Designed a movie recommender system using Python, Json, Pandas, and Scikit-learn and create a webpage using Streamlit and allow the users to select a movie and receive personalized movie recommendations based on their preferences.

- **Weather Prediction App**
  Using HTML, CSS, and Javascript I create a simple weather app that shows the temperature, humidity, and wind speed of the input location.
- **Spam Classifier**
  MATLAB code analyzed PIV and hot-wire data, calculating correlation functions and integral time scale. Reynolds stress line plots and spatial correlations were generated via Ensemble averaging, depicting eddy sizes and correlations effectively.
- **Personal Portfolio Website**
  Using HTML and CSS I create my Personal Portfolio Website.

TERM PAPER

- **Heat Pipe and it's Application**
  Designed a movie recommender system using Python, JSON, Pandas, and Scikit-learn and create a webpage using Streamlit and allow the users to select a movie and receive personalized movie recommendations based on their preferences.
- **themal chocking in Scramjet Engine**
  MATLAB code analyzed PIV and hot-wire data, calculating correlation functions and integral time scale. Reynolds stress line plots and spatial correlations were generated via Ensemble averaging, depicting eddy sizes and correlations effectively.

TECHNICAL SKILLS

- **Software tools:** SolidWorks, ANSYS(FLUENT), ICEM CFD,OpenFoam, LaTeX, Microsoft Excel.
- **Programming Languages:** C++, MATLAB, Python*, JavaScript* HTML*,CSS*,. *(* elementary proficiency)*
- **Programming Profile:**

POSITIONS OF RESPONSIBILITY
  – Active Member Of Supension team of **IIITDMJ Racing** during the year 2016-17

RELEVANT COURSEWORK
  – **APPLIED COMPRESSIBLE FLOWS (AE664A)**, Instructor: Dr Ajay Vikram Singh
  – **APPLIED COMPUTATIONAL FLUID DYNAMICS(AE661A)**, Instructor: Dr Rajesh Ranjan
  – **TURBULENCE (AE621A**, Instructor: Dr Alakesh Chandra Mandal
  – **HEAT TRANSFER IN AEROSPACE APPLICATIONS (AE608A)**, Instructor: Dr Rakesh kumar Mathpal

HOBBIES & INTERESTS
  – **Hobbies :** Playing chess and solving puzzles.
  – **Area of Interest :** Swimming.