



Prashant Kumar

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PhD Student | PMRF, AE, IIT Kanpur

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in LinkedIn Profile

EDUCATION

•Indian Institute of Technology, Kanpur

PhD in Aerospace Engineering

Jan 2023- Exp. Dec 2027

CGPA: 9.25

•National Institute of Technology, Goa

B.Tech in Mechanical Engineering

2018-2022

CGPA: 8.55

PUBLICATIONS

- Prashant Kumar, Rajesh Ranjan, **Evaluation of Physics-informed Machine Learning Approach for Computation of Fluid Flows**. Submitted in 10th International and 50th National Conference on Fluid Mechanics and Fluid Power (FMFP), 2023
- Prashant Kumar, Saurabh Singh Chauhan, Prasenjit Dey, **Effect of Corner Curvature of Square Cylinder on Flow Transition and Heat Transfer**. Proceedings of the 1st International Conference in Fluid Thermal and Energy Systems, (ICFTES2022)

PROJECTS

•RMML lab, IIT Ropar

Ansys Fluent, CFD, CFX, MATLAB

Non 2022 - Dec 2022

DESIGN OF GAS TURBINE FOR ENERGY STORAGE

- Design of Radial Gas turbine for High Temperature and Pressure (Numerical CFD Simulation in ANSYS Fluent).
- Studied the effect of supercritical CO_2 on critical flow of Turbine.

•Major Project (B.Tech)

Ansys Fluent, Tecplot, CFD, MATLAB

Aug 2021 - May 2022

UNIQUE SHEAR LAYER TOPOLOGY EVALUATION DICTATING FLOW TRANSITION OVER A SQUARE CYLINDER WITH ROUNDED CORNERS.

- Studied dependency of Lift & Drag Coefficient and Nusselt Number on shape of the bluff body.
- Found Critical Reynolds Number for Creep flow Transition, 2-D steady to unsteady transition, 2-D unsteady to 3-D unsteady transition.

COURSES AT IITK

Course Code	Course Title	Grade
AE661A	APPLIED COMPUTATIONAL FLUID DYNAMICS	A
AE608A	HEAT TRANSFER IN AEROSPACE APPLICATIONS	B
AE621A	TURBULENCE	B+
ME698W	INSTABILITIES IN FLUID FLOWS	A
IDC606A	HIGH PERFORMANCE COMPUTING WITH APPLICATIONS	Current
AE617A	BOUNDARY LAYER INSTABILITY AND TRANSITION	Current
AE643	SPORTS AERODYNAMICS	Current

WORK EXPERIENCE

•Graduate Engineer Trainee At Larsen & Toubro

July - Oct 2022

Worked in Plant and Machinery Department in Construction of Nuclear Power Plant, Kudankulam, Tamilnadu

TECHNICAL SKILLS AND INTERESTS

Languages: C/C++, Fortran, MATLAB, Python

Machine Learning Libraries : DeepXDE, Nvidia-Modulus PyTorch

CFD Software: OpenFOAM, Ansys Fluent, Tecplot

Others: Autodesk Fusion 360, Microsoft Office, Latex

Areas of Interest: Scientific Machine Learning, Turbomachinery Flows, Aerodynamics, Instability

EXTRACURRICULAR ACTIVITIES

•NSM Workshop for training in CFD, IIT Hyderabad

June 2023

Learned Parallel Computing using OpenMP, MPI, and OpenACC for CPU and GPU parallelism.

REFERENCES

- PhD Supervisor Dr. Rajesh Ranjan, rajeshr@iitk.ac.in, IIT Kanpur