



Prashant Kumar

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in LinkedIn Profile

EDUCATION

•Indian Institute of Technology, Kanpur

Jan 2023- Exp. Dec 2027

PhD in Aerospace Engineering

CGPA: 9.14

•National Institute of Technology, Goa

2018-2022

B.Tech in Mechanical Engineering

CGPA: 8.55

PUBLICATIONS

- Prashant Kumar, Rajesh Ranjan, **Evaluation of Physics-informed Machine Learning Approach for Computation of Fluid Flows**. Presented 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

Anslys 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)

Anslys 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	A
AE617A	BOUNDARY LAYER INSTABILITY AND TRANSITION	A
AE643	SPORTS AERODYNAMICS	C+
CS633	PARALLEL COMPUTING	Current
AE612	AERODYNAMICS-II	Current
AE669	MEASUREMENT AND DATA ANALYSIS	Current

TA-SHIP

- **AE646 - Scientific Machine Learning for Fluid Mechanics** in Department of Aerospace Engineering at IIT Kanpur from Aug to Nov, 2023.

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