PRANAV DIGAMBAR LOHAR

B.Tech. - Mechanical Engineering

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BRIEF SUMMARY

I am a dedicated engineering enthusiast with a strong academic background and expertise in Heat transfer, Computational Fluid Dynamics (CFD) and Renewable energy. Experienced in conducting research in various engineering domains, driving innovation, and promoting sustainability. My career objective is to contribute my skills and knowledge to advance engineering solutions and make a positive impact on sustainability and technology development.

KEY EXPERTISE

CFD | Aerodynamics | Ansys | Problem Solving | Fusion 360 | FEA | Teamwork | Heat Transfer | Communication Skills | openFoam

EDUCATION

MIT Academy of Engineering, Pune 2020 - 2024

B.Tech. - Mechanical Engineering | CGPA: **8.99** / **10**

New Polytechnic, Kolhapur, Kolhapur 2021

Diploma | Diploma - Automobile Engineering - Automobile Engineering | MSBTE | Percentage: **91.84** / **100**

Maharashtra High School, Kolhapur, Kolhapur 2018

10th | MSBSHSE | Percentage: **85.60** / **100**

AWARDS AND SCHOLARSHIPS

- Best All-Rounder Student of the Year 2023-24 | MIT Academy of Engineering

INTERNSHIPS

IIT Bombay | Core Engineering 01 Jan, 2024 - Present

Research Scholar

The motive is to evaluate diverse passive mode cooling strategies, with a particular emphasis on incorporating evaporative and radiative cooling techniques. I am exploring and analyzing the effectiveness of these methods independently and devising innovative approaches to synergistically combine them. This research contributes to enhancing energy-efficient and sustainable cooling solutions for various applications.

WaterUnit Infrastructure Consultancy LLP 05 Jun, 2023 - 12 Aug, 2023

CFD Intern

Key Skills: CFD | OpenFoam | Problem Solving | FreeCAD | AutoCAD | Meshing | Fluid Dynamics | Paraview

During my internship at WaterUnit Infrastructure Consultancy LLP, I actively engaged in hands-on computational fluid dynamics (CFD) analyses using OpenFOAM. Notably, I played a pivotal role in the CFD Analysis for the 454MLD Malad MCGM WWTF project. This experience enhanced my skills in mesh generation, solver configuration, and post-processing, adding valuable expertise to my engineering foundation.

PROJECTS

Solar still with built-in passive condenser. 02 Aug, 2022 - 15 Apr, 2023

Mentor: Mr. S. B. Powar | **Team Size:** 4

Key Skills: Heat Transfer | CFD | ANSYS | Renewable Energy | Energy | Sustainability

The project was focused on improving the productivity of solar stills. The project enhanced my skills in CFD analysis, fluid dynamics, heat transfer and design principles, while deepening my understanding of sustainable technologies and renewable energy.

Numerical analysis of Double Helical Heat Exchanger. 25 Jan, 2023 - 10 Apr, 2023

Mentor: Dr. Ganesh Shete | **Team Size:** 1

Key Skills: CFD | Heat Exchangers | Heat Transfer | ANSYS | Fluent | Thermal

Two double-helical counterflow heat exchangers with different diameters were modeled using Fusion360 software and analyzed using ANSYS Fluent. Comparison was made between all models using different flow rate combinations to determine the effectiveness of the heat exchangers. The effectiveness - NTU method was utilized.

Performance analysis Vertical Axis Wind Turbine 09 Dec, 2021 - 02 Jul, 2022

Mentor: Dr. Abhijeet Malge | **Team Size:** 4

Key Skills: CFD | Design | Project Planning | Team Leadership | ANSYS | Aerodynamics

Made 3 different models of VAWT using Fusion360 software. Analyzed all the models with using fluid mechanics and aerodynamic principles to find the better model with good effectiveness and efficiency. ANSYS Fluent was utilized for CFD analysis.

PUBLICATIONS / RESEARCH / WHITE PAPERS

CFD-Based Performance Analysis and Optimization of Earth-Air Heat Exchangers. 19 Dec, 2023

Conference Paper | Fluid Mechanics and Fluid Power | **Mentor:** Dr. G. V. Shete | **No. of Authors:** 5

This study navigates the evolving landscape of Earth-Air Heat Exchangers (EAHEs), studying their significance and contemporary challenges in sustainable HVAC technology. Findings driven by Computational Fluid Dynamics (CFD) simulations highlight material nuances, emphasizing the symbiotic relationship between simulation-guided design and material selection. This research positions EAHEs as pivotal in advancing energy-efficient cooling technologies for a sustainable future in thermal engineering.

Experimental & CFD Investigation of Radiative Heat Transfer for Room Cooling. 19 Dec, 2023

Conference Paper | Fluid Mechanics and Fluid Power | **Mentor:** Dr. P. P. Kothmire | **No. of Authors:** 5

This research explores the potential of integrating cooling pipes within walls to enhance radiative heat transfer for indoor cooling. This research contributes to sustainable indoor cooling, emphasizing the synergy between theoretical models and practical applications, and aligns with global efforts for energy efficiency and environmental impact reduction.

Experimental and CFD Investigation of shear on Electrocoalescer performance. 19 Dec, 2023

Conference Paper | Fluid Mechanics and Fluid Power | **Mentor:** Dr. P. P. Kothimre | **No. of Authors:** 2

This study explores the efficient separation of oil-water mixtures through electrocoalescence, leveraging the interplay of fluid mechanics and electrical forces. This research promises to advance both fundamental understanding and practical applications, optimizing water-oil separation processes for enhanced efficiency and sustainable technologies.

ACHIEVEMENTS

- Secured a position in the top 10 at the boing aeromodelling competition-2023 held at IIT Kharagpur.
- Achieved overall All India Rank (AIR) 7 in the SAEDDC 2023, National level RC Aircraft Development Competition. Also secured AIR 1 in design report, and AIR 3 in technical presentation as R&D and Manufacturing Head.
- Achieved All India Rank 2 in National Level Competition on Finite Element Analysis - 2023 organized by SAE India, held at SAE Chennai.

ASSESSMENTS / CERTIFICATIONS

Basics of Finite Element Analysis

Key Skills: FEA | Problem Solving | Finite Element Analysis

This 8 week course was offered by IIT Kanpur and included the various numerical methods used for solving the solid mechanics problems.

The complete hydraulic course

Key Skills: Hydraulics | Pumps | Hydraulic Systems

This course was offered by Dr. Praphulla Hatte. the course included everything from basics to advanced about hydraulic systems used in industries.

Product Design and Manufacturing

Aggregate: 83 / 100

Key Skills: Design | Manufacturing

Ansys Track Completion: Introduction to Finite Element Methods

Key Skills: ANSYS | ANSYS mechanical | FEA

SEMINARS / TRAININGS / WORKSHOPS

Finite Element Analysis (Using ANSYS) **Institute Name:** SAE India

Key Skills: FEA | ANSYS | Analysis

CO-CURRICULAR ACTIVITIES

- Captain, College Finite Element Analysis Team | 2023-24, Led and managed a dynamic team of 5 members in national-level FEA competitions organized by SAE.
- R&D Head, MITAero (Aeromodelling cub of MIT Academy of Engineering) | 2022-23, Leaded the team, optimized the aircraft design and represented the team in at national level competitions.

EXTRA CURRICULAR ACTIVITIES

- Volunteered at MAHATech-2022 exhibition held in Pune. Assisted with various tasks such as doing announcements, event setup, attendee registration, and providing information about the exhibition.

PERSONAL INTERESTS / HOBBIES

- Reading
- Travelling
- Sketching

WEB LINKS

- Personal - https://pranav.journoportfolio.com/

PERSONAL DETAILS

Gender: Male
Marital Status: Single
Current Address: Hostel 13, IIT Bombay, Powai, Mumbai, Maharashtra, India - 400076

Emails: pranav.lohar@mitaoe.ac.in , pranavlohar09@gmail.com

Date of Birth: 09 Mar, 2003
Known Languages: Marathi, English, Hindi
Permanent Address: 1465/1, A ward, near Mahakali temple, Shivaji peth, Kolhapur, Maharashtra, India - 416012
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