Aditya Kumar

Sophomore at IIT Jodhpur | +91-7001965691
b22me004@iitj.ac.in | adityaewms@gmail.com

EDUCATION

IIT JODHPUR
Btech in Mechanical Engineering
October 2022-
CGPA: 8.70 (till 4th sem)
Department Rank-3

EAST WEST MODEL SCHOOL
ISC 2021
Senior Secondary | 95.5%

ICSE 2019
Secondary | 98.6 %

LINKS

Github:// **ioTa03**
LinkedIn:// **Aditya**
YouTube:// **Iota Dash**

COURSEWORK

UNDERGRADUATE
CSE & Maths
Data Structures and Algorithms
Introduction to Machine Learning
Introduction to Computer Science
Scientific Computation
Linear Algebra
Signals and Systems

Mechanical

Fluid Mechanics
Mechanics of Solids
Electromagetism and Optics
Engineering Mechanics

SKILLS

PROGRAMMING
• C • C++ • Python • Javascript
• Matlab • Java

WEBD
• HTML • CSS • Tailwind • Bootstrap
• React JS • MongoDB • Fast API

MACHINE LEARNING
• NumPy • Pandas • Seaborn • SkLearn
• Open CV • VADER

ACHIEVEMENTS

• Department Rank-3, in Mechanical Department, IITJ (CG-8.70)
• Scored A Grade in all the 3 courses, i.e., IC, IML, and DSA, offered by IITJ and am amongst the very few to have done this.

PROJECTS

S.P.A.R.K. | Automatic Minesweeper Solver
April 2024 | Dr. Suchetana Chakraborty
- Implemented an innovative Minesweeper mine probability suggester utilizing a novel approach, coupled with a dynamic user interface for real-time feedback, displaying the probability of a mine as a percentage on adjacent unopened cells
- Amongst the Top 3 projects of the DSA course offered by IITJ
- Created and implemented the logic for the approach, utilising custom data structure for representing each cell and enhancing code modularity

DATA DRIVEN ANALYSIS OF FLUID FLOW
April-2024 | Dr. Harshal Akolekar
- Extracted and downsampled frames, applied POD using SVD, and identified modes explaining 95% EVR, reconstructing images with reduced dimensions.
- Added and analyzed salt and pepper and Gaussian noise, noting salt and pepper caused significant disruption.
- Cleaned noisy images using Gaussian filter and NLM deblurring, achieving superior results with NLM

FLEXPLOT | Shear Force and Bending Moment Analyzer
Nov-2023 | Dr. Hirishikesh
- Developed a robust algorithm for calculating shear force and bending moment in a rod under varying forces and positions.
- The code accommodates diverse inputs, assuming loads between supports, while flexibly handling support positions and beam lengths.
- Developed the logic for usage using the singularity function.

DEVLUP REVAMP
Jan 2024 - Feb 2024 | DevlUp Club, IIT Jodhpur
- Revamped the DevlUp Labs club website at IIT J from Vue to React, leveraging Fast API and MongoDB for efficient data retrieval and storage. Implemented UserContext for passing data.
- Contributed to efficient routing of pages and data and the integration of API.

AD ENGAGEMENT
NOV - 2023 | Dr Avinash Sharma
- Did exhaustive EDA, and used Vader Library to implement User Sentiment Analysis to understand user behavioural patterns on social media platform like Instagram, weighing in factors such as likes, comments, shared status etc to understand if the conversation on the platform and on the comments of pictures are negative or positive or neutral (the dataset was in latin).
- It helped us understand which kind of posts would yield the maximum ads.

AEROSOL SCATTERING USING AI-BASED APPROACH
Nov - 2023 | Dr. V Narayanan
- Designed a custom, user-defined dataset creation tool for automated model training for Rayleigh Scattering, removing the need for manually creating and exporting dataset for new test cases
- Utilized Gaussian Regression for predictive analysis, achieving high accuracy by comparing slopes and evaluation metrics. Introduced innovative single and dual angle analysis methods, enhancing curve matching capabilities across various particle sizes.