PRATYUSH CHANDRA | 21CS2030

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EDUCATION

Year	Degree/Board	Institute	CGPA/Percentage
2026	Integrated Dual Degree(B.Tech+M.Tech) in Computer Science Engineering & Artificial Intelligence	Rajiv Gandhi Institute of Petroleum Technology,Jais,Amethi (**An Institution of National Importance set up under the Act of Parliament, MoPNG, Government of India)**	7.60
2020	Class XII,CBSE	D.A.V. Centenary Public School,Siwan	82.33%
2018	Class X,CBSE	D.A.V. Centenary Public School,Siwan	90.6%

EXPERIENCE/PROJECTS

Inventory Optimization | ***Machine Learning,Linear Programming & Computer Optimization Techniques*** **[Apr'23 - Till date]**

- Reduced inventory holding costs by **15%** while maintaining a **98%** fill rate for fluctuating demand by analyzing 24 months of historical sales data to identify seasonality and trends,used **Pandas** for data manipulation and **Scikit-learn** for feature scaling and transformation.
- Developed a machine learning model **ARIMA** achieving an accuracy of **87%** in forecasting future demand.
- Integrated the demand forecast with the model to determine optimal order quantities and reorder points using **CVXPY 1.5 solver,** leading to a significant reduction in stockouts.
- Achieved a **15%** reduction in inventory holding costs, resulting in substantial cost savings and Maintained a **98%** fill rate, ensuring high customer service levels and minimizing stockouts.

Supply Chain Network Design | ***Linear Programming*** **[Feb'24 - Mar'24]**

- Designed an efficient supply chain network that minimized **transportation costs** by **12%** and improved **average delivery time** by **1.5 days** and Developed a network model representing suppliers, warehouses, and customers across **5 locations** using **Gephi** tool and python library **NetworkX**.
- Defined decision variables such as the quantity shipped from each supplier to each warehouse and Formulated constraints including:
  * Capacity limitations at warehouses
  * Minimum and maximum demand requirements for customers
- Utilized linear programming **CVXPY 1.5 solver** to solve the model and identify the **optimal network configuration** with the **minimum total cost** (transportation + other relevant costs) and Achieved a **12%** reduction in **transportation costs**, leading to significant cost savings for the company.
- Improved **average delivery time** by **1.5 days**, leading to faster customer fulfillment and potentially increased customer satisfaction.
- This project was the semester project for the course Linear Optimization taught by **Dr. Debashish Jena**

AI-Powered Emotional Audio Enhancement | ***AI,Deep Learning*** **[Dec'23 - Feb'24]**

- Developed an AI system to infuse emotions like anger, happiness, despair, intrigue, and more, into synthetic audio files using **VAE** and **GAN**. Achieved over **80%** accuracy in user perception tests for identifying intended emotions i.e. effectiveness of the AI system in conveying the intended emotions.
- Utilized machine learning techniques to improve the speech quality of AI-generated audio, resulting in a **20%** reduction in perceived artifacts (e.g., unnatural pauses, robotic voice) compared to pre-enhancement audio.
- This project was the **B.Tech Project** done under the supervision of **Dr. Susham Biswas.**

Combinatorial Polymer Design | ***Machine Learning,AI,Deep Learning*** **[April'23 - Aug'23]**

- Developed an AI-powered system for combinatorial polymer design, achieving a **75%** success rate in identifying novel and effective polymer combinations.
- Leveraged a combination of machine learning algorithms, including **Generative Adversarial Networks (GANs)** and **Support Vector Machines (SVMs)**, to analyze fundamental data and discover promising polymer combinations with the potential to outperform existing materials.
- Predicted the properties (e.g., strength, conductivity, biodegradability) of these novel polymers using **regression models**, enabling the prioritization of candidates for further investigation and reducing the need for costly and time-consuming industrial trials by an estimated **30%.**

SKILLS AND EXPERTISE

- **Programming Languages :** Python, C/C++, MATLAB
- **Machine Learning and Deep Learning :** TensorFlow, Keras, Scikit-Learn, NLTK
- **Data Handling and Management :** SQL, SQLite, MongoDB
- **Data Analysis and Visualization :** Numpy, Pandas, Matplotlib, NetworkX, MS Excel, PowerBI, VBA Macros, Google Looker Studio
- **DevOps :** GitHub Actions, Docker
- **Cloud Computing and Deployment :** AWS

ACADEMIA

AI : Machine Learning | Artificial Intelligence | Data Mining | Deep Learning | Natural Language Processing | Image,Speech,Video Processing | UAV Data Processing.

Computer Science : Data Structure & Algorithms | Design and Analysis of Algorithms | Database Management Systems | Computer Networks | Theory of Computation | Web Technology | Operating Systems | Linear Optimization | Software Engineering | Mobile Computing | Soft Computing .

LEADERSHIP ROLES

Design Head | GeeksforGeeks Student Chapter, RGIPT **[Jun'23 - May'24]**

- Led over 15 creative workshops on **Graphic Design**, **UI/UX**, Digital Illustration, and Animation, delivering hands-on learning experiences.
- Provided personalized mentorship and support to more than 100 aspiring designers, fostering their professional development.
- Organized networking events for 200+ students, creating opportunities to connect with industry experts and peers for collaborative growth.

AWARDS AND ACHIEVEMENTS

- Attained a position among the top **12%** of candidates, outperforming **0.14** million students in the esteemed **JEE Advanced 2021** examination.
- Earned a distinguished placement among the top **15%** of candidates, surpassing **0.89 million** students in the **Joint Entrance Examination Main 2021**.
- Cleared the **GATE 2024 DA(Data Science & Artificial Intelligence)** examination on the first attempt, meeting the category cut-off requirements.

CO-CURRICULAR ACTIVITIES

- Bearer of all the three certficates - First(Pratham) and Second(Dwitiye) Sopan Third(Tritiye) Sopan, **Scout & Guide** Certificates.
- Participated in multiple Brawlhalla and BGMI esports events representing the college, demonstrating gaming proficiency at the collegiate level.