SANIDHYA RANA | 23AG63R31

FOOD PROCESS ENGINEERING

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2025	M.TECH	IIT Kharagpur	8.28 / 10
2023	B.TECH (Agricultural Engineering)	JNKVV jabalpur	7.96 / 10
2018	Senior School Certificate Examination	Central Board of Secondary Education(CBSE)	72%
2016	High School Certification Examination	Board of Secondary Education Madhya Pradesh (MPBSE)	76.67%

PROJECTS

Optimizing Estimated Delivery Times: Machine Learning Approach for Food Delivery Platforms | Self Project **[Dec'23]**
Scikit-Learn | Python | EDA | Jupyter Notebook | K Means Clustering | Matplotlib
- Used ML in Python to predict food delivery times like Zomato/Swiggy, boosting transparency in estimated delivery.
- Employed the Haversine formula for calculating the distance between food prep and delivery sites, pivotal in estimating delivery durations.
- Performed data analysis and visualization to identify factors impacting delivery times, using insights to train LSTM for precise time predictions.

Personalized Recipe Recommendation System | Term Project | Prof. A.K.Chakravorty, IIT Kharagpur **[Nov'23 -Dec'23]**
TensorFlow | | Python | Jupyter Notebook | MS-Excel | Scikit-Learn | K Means Clustering
- Created a Python nutrient calculator using Harris-Benedict equation for BMR and TDEE calculations, accommodating various user activity levels.
- Derived personalized protein, carbohydrate, and fat needs from health guidelines, tailoring dietary recommendations to user-specific requirements.
- Applied the K-means algorithm to a merged food recipe and nutrient dataset, filtering food choices based on nutritional needs and dietary preferences.
- Engineered personalized recipe recommendations using nutrition analysis and algorithmic filtering for the top 5 food options meeting user dietary needs.

Precise Meat Condition Classification | Term Project | Prof. A.K.Chakravorty, IIT Kharagpur **[Nov'23 -Dec'23]**
TensorFlow | Keras | Python | Jupyter Notebook
- Developed a Python-based Convolutional Neural Network (CNN) for binary meat condition classification using a Kaggle image dataset.
- Built a Python CNN for Kaggle's binary meat condition classification, emphasizing high accuracy in discerning fresh and rotten meat.
- The CNN model achieved an impressive accuracy rate of 85%, showcasing its reliability and effectiveness in classifying meat conditions.

Detecting Fraudulent Transactions in Credit Cards: Leveraging ML and Feature Engineering | Self Project **[Dec'23]**
Scikit-Learn | Python | EDA | Jupyter Notebook | Decision Tree | Matplotlib
- Utilized Python and Machine Learning for online payment fraud detection in credit card transactions.
- Utilized a Kaggle dataset, training a model on transactional details to distinguish fraudulent from genuine transactions.
- Developed a classification model leveraging historical patterns, proactively identifying potential fraud cases.
- Employed feature engineering and model evaluation to improve accuracy and reliability, enhancing the fraud detection system.

Fundamental Analysis of Agro Tech Foods Limited | Term Project | Prof. P.K. Singh, IIT Kharagpur **[Oct'23 - Nov'23]**
- Conducted in-depth analysis of Agro Tech Foods Limited's financial and business performance
- Utilized financial statements, product range, current initiatives, and various financial ratios for the analysis
- Interpreted trends to gain insights into the company's financial position
- Clarified and obtained a thorough understanding of the company's financial position

Grain Storage Optimization | Term Project | Prof. P.S. Rao, IIT Kharagpur **[Sept'23 - Nov'23]**
- Designed a system to optimize grain storage utilization based on land dimensions and bag specifications.
- Maximized grain storage capacity while considering bag dimensions and minimizing unused land space.
- Crafted an efficient script employing a function to iteratively determine the ideal bag count per layer, optimizing storage space.
- Achieved precise and efficient grain storage arrangements, maximizing utilization based on land and bag specifications.

Study of Water-Table Behavior of Narsinghpur District | BTech Project | Prof. R.N. Shrivastava, JNKVV Jabalpur **[Sept'22 - Feb'23]**
- Investigated groundwater dynamics in Narsinghpur, MP, analyzing usage variations and irrigation intensity as crucial factors.
- Conducted a comprehensive 2011-2022 study on pre/post-monsoon water table behaviors across administrative blocks.
- Employed data analysis to assess fluctuation patterns, categorize observation wells, and present insights in a detailed thesis report.

SKILLS AND EXPERTISE

Area of interest: Probability and Statistics | Machine Learning | Data Analytics | Deep Learning | Time Series Forecasting
Programming Languages/Softwares: Python | SQL | Microsoft SQL Server | Power BI
Software and Libraries: MS-Excel | NumPy | Pandas | Matplotlib | Seaborn | Scikit-Learn | TensorFlow | Keras | Sqlite3

CERTIFICATIONS

- Supervised Machine Learning: Regression and Classification | Deep Learning.AI | Coursera
- Machine Learning with Python | IBM | Coursera
- Data Analysis with python | IBM | Coursera
- Computer Vision | Kaggle

COURSEWORK INFORMATION

Food Process Modelling | Applied Machine Learning | Data Structure and Algorithms | Statistics | Financial Technology for Rural and Agribusiness Development | Total Quality Management and Six Sigma | Robotics in Food Processing and Handling

AWARDS AND ACHIEVEMENTS

- Secured All India Rank 32nd in Graduate Aptitude Test in Engineering (GATE) 2023.

EXTRA CURRICULAR ACTIVITIES

- Actively participated in various activities as a volunteer at the National Service Scheme (NSS) unit including health camps and awareness campaigns.
- Attended an Art of Living workshop Yes + and learned powerful breathing techniques, yoga, meditation, and practical wisdom for our modern world.