# BODA KALYAN SINGH | 23CL60R20

## EARTH SYSTEM SCIENCE AND TECHNOLOGY

## EDUCATION

| Year | Degree/Exam | Institute | CGPA/Marks |
|------|-------------|-----------|------------|
| 2025 | M.TECH | IIT Kharagpur | 8.35 / 10 |
| 2022 | B.TECH in Civil Enginnering | JNTUH College of Engineering Manthani | 6.44 / 10 |
| 2018 | TSBIE | Sri Chaitanya junior Kalasala, Hyderabad | 97.4% |
| 2016 | TSBSE | Good Shepherd School, Papaiahpet | 9.7 / 10 |

## INTERNSHIPS

### Digital Summarizer|Abstract text summarization, [31 Dec 2023- Ongoing]

•**Machine Learning Intern with SUVIDHA FOUNDATION**, contributing to the organization's mission by spearheading comprehensive data collection initiatives. Adept at aggregating diverse datasets sourced from prominent English  newspapers, specializing in **processing and analyzing newspaper data spanning the years 2010-2015.**
•*Developed Robust Text Summarization Model*: Applied advanced techniques in **Deep Learning, Natural Language  Processing (NLP), and Machine Learning** to create a highly effective text summarization model.Achieved notable success in distilling large volumes of information into concise and coherent summaries.

### Data Science Intern With CODSOFT, [10 Jan 2024-Ongoing]

•Spearheaded impactful contributions as a Data Science Intern at Codsfot, actively engaging in real-time projects, proficiency in Python to develop predictive models for diverse applications, showcasing a keen understanding of statistical analysis and machine learning techniques. Collaborated seamlessly with cross-functional  teamwork skills.
•Notable projects include: **Titanic Survival Prediction | Movie Rating Prediction with Python| IRIS Flower Classificaton | CREDIT Card Fraud Detection**
Engaged in rigorous data cleaning, preprocessing, and feature engineering to ensure the reliability and accuracy of models. contributing innovative ideas and solutions

## PROJECTS

### Covid-19 Detection using Chest X-Ray                                                         [Sep 2023]

•Conducted a comprehensive **Exploratory Data Analysis (EDA)** on a meticulously curated and well-annotated datasetcomprising chest X-ray images. The primary focus of the analysis was on cases diagnosed as positive for COVID-19.The dataset used in this study consists of chest X-ray images,each meticulously annotated for accurate result
•The **EDA** revealed valuable insights into the distribution, Developed a **Convolution Neural Networ (CNN)** model from scratch for detecting Covid-19 using chest X-Ray images ,Achieved highest **accuracy of 91.14% and 98.66%** on training and testing set post increased the model generalization using **data augmentation techniques.**

### Spam Classification                                                                          [July 2023]

•Worked on **SMS Spam Collection dataset** which consists of 5574 messages to build a prediction model that will   accurately classify which texts are spam or harm. Applied **Natural Language Processing (NLP)-based** techniques for cleaning and refining textual data, ensuring the model's effectiveness in **real-world contexts**
•Executed a comprehensive approach to text data preprocessing and analysis, with a specific focus on **Natural Language Processing (NLP)**. Achieved exceptional accuracy through the application of advanced methodologies, culminating in a **Naïve Bayes model with an impressive 98% accuracy rate** outcome.

### Heart disease prediction                                                                     [Aug 2023]

•Led the development of a predictive model for early diagnosis of heart disease, employing the **Decision Tree algorithm**. Conducted a thorough **Exploratory Data Analysis (EDA)** to identify key symptoms influencing heart disease, utilized **numpy** for analysis and **Matplotlib Seaborn** libraries to create insightful visualizations.
•Implemented advanced **hyperparameter tuning techniques**, including **GridSearchCV and RandomSearchCV,** to optimize model parameters and enhance predictive accuracy. Successfully fine-tuned model parameters to achieve a commendable **accuracy rate of 84.6%** by tuning key parameters, extending depth to 15 levels.

### Census Income                                                                               [Oct 2023]

•Led the execution of **Exploratory Data Analysis (EDA)** on the Census Income dataset, leveraging advanced data  visualization techniques with **Matplotlib, Pandas, and Seaborn**. Spearheaded the execution of Exploratory Data Analysis on the Census Income dataset, ensuring a thorough understanding of data characteristics.
•Subsequently, undertook the development of **predictive models using Logistic Regression, Decision Tree, and Random Forest** algorithms to discern patterns and predict income levels. Demonstrated versatility in algorithm selection and optimization, with the Random Forest classifier yielding the highest accuracy, achieving  81.39%.

## SKILLS AND EXPERTISE

**Programming Languages** : Python, R, C, MATLAB, SQL|**Frameworks and Libraries**: Oops, Pandas, Numpy, Scikit-learn, NLTK, Tensorflows|**Data Visualization Techniques:**  Matplotlib, Seaborn, EXCEL|**Cloud platforms:** MS Azure |**Other known software**: QGIS, Google earth engine, CAD| **Tools**: Jupyter notebook, Google colab

## CERTIFICATIONS

### CERTIFIED COURSES

**Advanced Certification in Data Science and Artificial Intelligence[CODE IIT MADRAS, Mar 2023-Ongoing]**
•Course Domain: Data Science, Machine Learning, Artificial intelligence, Power BI,GIT
**The Complete Data Structures and Algorithms in Python|Data Structures adn algorithms|Python|Udemy- [Nov 2023]**
**Python Programming Masterclass|Python|Udemy- [June 2023]**
**Introduction to Natural language Processing| Great Learning- [Oct 2023]**
**Introduction to R|Basicof R language|Great Learning- [Mar 2023]**
**Data Analysis with R programming| Data Analysis and visualization with R language |Coursera- [Dec 2023]**

## COURSEWORK INFORMATION

Data Analytics in Earth System Science | Statistical and Machine Learning Methods in Water Resources Engineering | Computational Methods | Design Lab Atmospheric Dynamics | Carbon Cycle and Global Climate Change | Satellite Remote Sensing | Global Climate System and Cloud Precipitation Processes|Physical Oceanography

## POSITIONS OF RESPONSIBILITY

### Secretory Sports| MMM Hall Council, IIT Kharagpur[25 Sep 2023-Ongoing]

•Selected in **team of 10 members** to organise games, events for Pt. Madan Malaviya Hall of Residence is the **Highest Boarders** capacity hall with **2100+ students** of IIT Kharagpur Guiding the students to participate in Institute lev**el** and national level events This role involved **mentoring and facilitating students** in leveraging opportunities beyond the campus This experience underscores leadership, teamwork, and a commitment to enhancing the overall student experience within the diverse and vibrant
•Spearheaded the organization of magnificent events like **Illumination** during Diwali and **Hall Day**, preserving the rich cultural heritage of IIT Kharagpur| Played a pivotal role in planning, **conducting, and organizing various sports events**, providing a platform for students to showcase their talents this involvement reflects a commitment

## AWARDS AND ACHIEVEMENTS

•Recognized and selected for the prestigious **National Merit Scholarship in the year 2018**, reflecting academic excellence and outstanding achievements
•Successfully **qualified in the GATE 2023** examination, demonstrating proficiency and competence in the chosen field of study.

## EXTRA CURRICULAR ACTIVITIES

•**Football Player**:Captain of B zone University football team which stood up as Winners, Mar'2020 |**Represented CORAL** as Academic Unit Representative at **Academia-Industry Conclave 2023** to showcase different domain expertise of the centre|Done a Reseach on **Wireless power transmission technology** to establish a startup