

# YASH RAJ

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Innovative Computer Science Engineer with strong expertise in machine learning and data science. Skilled in applying advanced algorithms to solve complex problems, enhancing efficiency and accuracy. Proficient in data manipulation, analysis, and visualization, as well as cloud computing and deployment technologies. Committed to continuous learning and improvement, with a passion for leveraging technical skills in artificial intelligence and data analytics.

## SKILLS

### Technical Skills:

*Programming Languages:* Python, C, C++, R, SQL.

*Libraries and frameworks:* Pandas, Numpy, Tensorflow, Keras, PyTorch, Scikit-learn, OpenCV, Statsmodels.

*Data Manipulation and ETL:* SQL, MySQL, MongoDB, Apache Spark.

*Others:* Jupyter Notebooks, Data Preparation, MS Excel, Power BI, Git and GitHub, Shell, DVC, MLflow, Dialogflow, Docker, Kubernetes, AWS, Azure, GCP, Selenium, LaTeX, HTML, CSS, JS, APIs, FastAPI, PySpark, NLP, Computer Vision, LLMs, Langchain, Cloud computing, Cybersecurity, GitHub Actions, CI/CD pipelines.

**Soft Skills:** Critical Thinking, Problem-Solving, Attention to Detail, Strong Communication, Team Collaboration, Project Management, Time Management, Adaptability, Data-driven Decision Making, Communication Skills, Customer Service, Value Proposition, Stakeholder Management, Business Requirements, Research & Analysis, Content Writing, Report Writing, Knowledge Acquisition.

## EXPERIENCE

### Ignitus WorldWide Co

MADRID, SPAIN

#### ML-LMS project Intern.

Feb-2023 to Present

*Project: Species Composition Prediction with High Spatial Resolution at Continental Scale Using Remote Sensing*

*Responsibilities:*

- Collaborated with contributors and organizers from INRIA, LIRMM, and Université Paul Valéry, Montpellier.
- Conducted baseline experiments with Bioclimatic, Landsat, and Sentinel data, achieving validation losses of 0.25784, 0.26424, and 0.23555, respectively.
- Designed and implemented a multimodal model integrating tabular data, Landsat cubes, bioclimatic cubes, and Sentinel image patches, achieving a validation loss of 0.31626.
- Engaged in continuous model improvement by experimenting with neural network architectures, loss functions, data augmentation strategies, and hyperparameter tuning.
- Generated high-resolution maps of species composition and biodiversity indicators across Europe to enhance species identification tools and biodiversity management.
- Participated in the GeoLifeCLEF 2024 challenge to advance species distribution modeling.
- Contributed to the development of tools for biodiversity management and conservation.

*Key Achievements:*

- Successfully demonstrated the effectiveness of integrating multiple data sources for species distribution modeling.
- Prepared educational resources and supported conservation planning through actionable insights.
- Enhanced the predictive accuracy and robustness of species identification tools like Pl@ntNet.

### Central University of Haryana

HARYANA, INDIA

#### Minor project Intern.

Sept-2023 to Jan-2024

*Responsibilities and key achievements:*

- Designed and trained a model to accurately detect sleep onset and wake-up phases from wrist-worn accelerometer data, contributing meaningfully to the field of sleep research.
- Performed comprehensive Exploratory Data Analysis (EDA) to understand the characteristics and patterns in wrist-worn accelerometer data and identified trends, outliers, and data distribution through visualizations and summary statistics.
- Loaded and preprocessed accelerometer data to ensure it met criteria for sleep window detection, extracted and engineered relevant features such as anglez and enmo.
- Achieved a commendable accuracy of 92% in detecting sleep onset and wake-up events.

### Cloud Counsellage Pvt. Ltd.

MUMBAI, INDIA

#### Machine Learning Intern.

July-2023 to Sept-2023

*Responsibilities and key achievements:*

- Summer Internship 2023.

- Collaborated with a multidisciplinary team to implement ML algorithms, addressing real-world challenges and enhancing comprehension of critical business metrics.
- Attended a variety of industry workshops to gain practical industry experience and enhance knowledge of ML applications in business contexts.
- Conducted research on company data and stakeholders to identify key trends and insights, informing strategic decision-making and contributing to the overall success of projects.
- Contributed on a live project titled "PathfinderED: Navigating Graduation and Career Success," achieving a 90% accuracy on the validation dataset and reduced processing time by 18%, demonstrating efficiency improvements in the project.

**BlackCoffer Pvt. Ltd.**

**Data Science Intern.**

**DELHI, INDIA**

**May-2023 to June-2023**

*Responsibilities:*

- Conducted data mining activities to extract valuable insights from large datasets, leading to increased overall efficiency and cost savings for the company.
- Managed SQL databases and ensure data integrity.
- Applied critical thinking and problem-solving skills to optimize data processes.

**Abhyuday IIT-Bombay**

**Software Developer Trainee**

**MUMBAI, INDIA**

**June-2022 to July-2022**

*Responsibilities:*

- Completed a six-week intensive software development program, building a solid foundation in Python application development.
- Developed a robust full-stack application using Python, QT Designer, and managed SQLite databases.
- Conducted comprehensive testing and debugging, ensuring high reliability and efficiency.
- Enhanced teamwork and communication skills through effective collaboration with team members.

## **PROJECTS AND COMPETITIONS ([GitHub link](#))**

### **FootyFlow: Football Analysis with YOLO ([Link](#))**

Developed an AI-based football analysis system using YOLO for real-time detection and tracking of players, referees, and football in a football match videos.

### **OrderOwl: Food Delivery Chatbot ([Link](#))**

Created a food delivery chatbot using Dialogflow for conversational ordering and tracking. Integrated a payment gateway and order tracking by ID and customer name. and implemented offers and storehouse item display.

### **Text-Summarizer-App: Summarization Tool ([Link](#))**

Developed a text summarizer app using Google Pegasus SamSum model for effective and efficient text summarization. Integrated with AWS for CI/CD deployment, including steps to create, build, and launch the app using Docker and AWS services also created a conda environment and set up local configurations and pipelines for seamless operations.

### **RetentiveGuard: Essay Authorship Detection ([Link](#))**

Developed a model to differentiate between essays written by students and those generated by large language models (LLMs). The project focuses on essays written in response to one of seven essay prompts, which involve reading source texts and writing a response. RetentiveGuard aims to enhance academic integrity by effectively detecting LLM-generated essays.

### **Emotion-Based Music Recommender System ([Link](#))**

Developed an Emotion-Based Music Recommender System that suggests songs based on a user's mood, determined from their image using a combination of OpenCV and a CNN-DNN model.

### **Kidney Disease Classification using deep learning ([Link](#))**

Developed a Kidney Disease Classification project using deep learning, incorporating end-to-end implementation with MLflow, DVC, and deployment processes. The project demonstrates effective use of cloud services and modern development practices in a healthcare application.

### **Jharkhand Tourism Website (front-end) ([Link](#))**

Developed the Jharkhand Tourism Web Front-End, a web project designed to showcase the attractions and beauty of Jharkhand, India. Users can easily navigate the website to explore Jharkhand's nature, culture, and landmarks.

### **Generative-AI Projects ([Link](#))**

### **Kaggle Competitions ([Link](#))**

### **Research Work ([Link](#))**

## **EDUCATION**

### **B. TECH (Computer Science and Engineering)**

Central University of Haryana.

SGPA: 7.86

**Haryana, India**

Oct-2020 to present

## INTERMEDIATE (High school +2)

DAV Public School.

Percentage: 89%

Ranchi, Jharkhand

May-2018 to July-2020

### Relevant Courses

Intermediate Programming, Probability and Statistics, Linear Algebra, Calculus 1-3, Computer networks, Operating systems, Machine Learning, Software Engineering, Distributed Systems, Data structures and algorithms, DBMS.

### CERTIFICATIONS

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|---|----------|
| • Swayam NPTEL course certification on 'Introduction to Machine Learning'.                  | Apr 2023 |
| • Swayam IGNOU course certification on 'Introduction to Cyber Security'.                    | Jan 2024 |
| • Swayam IGNOU course certification on 'Digital Forensics'.                                 | Aug 2022 |
| • Edx MIT 6.00.1X course on 'Introduction to Computer Science and Programming with python'. | Oct 2021 |
| • Swayam IGNOU course certification on 'Image Processing using Python'.                     | Nov 2023 |
| • Swayam IGNOU course certification on 'Computational Neuroscience'.                        | Oct 2023 |

### PERSONAL DETAILS

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**Languages:** English and Hindi (fluency in English)

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**GitHub:** [to GitHub](#)

**LinkedIn:** [to LinkedIn](#)

**Kaggle:** [to Kaggle](#)

**Leetcode:** [to Leetcode](#)