TARUN REDDY NERELLA

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Aspiring to harness my expertise in AI/ML, data science, and software development, I aim to contribute to cutting-edge solutions that enhance efficiency and innovation in a forward-thinking organization.

EDUCATION

Master of Science | Computer Science | *Aug 2022 - Present*
University of Colorado Denver | Denver | GPA : 3.71
Course Works : Big Data Systems, Artificial Intelligence, Deep Learning, Computer Vision, Machine Learning

Bachelor of Technology | Computer Science and Engineering | *Aug 2018 - June 2022*
JB Institute of Engineering and Technology | Hyderabad
Course Works : Data Structures, Operating Systems, Computer Networks, Database Management Systems

EXPERIENCE

Student Assistant | CEDC | University of Colorado Denver *Jan 2023 - Present*
- Assisted in a research project focusing on AI/ML applications in educational technologies.
- I represent the University and coordinated student outreach, managed university events to foster active engagement.

Data Analyst | Intern | Rinex, Entrepreneurship Cell IIT Kharagpur *July 2021 - Sept 2021*
- Analyzed and cleaned datasets to discover patterns for accurate predictive models.
- Engineered features and used statistical methods to forecast entrepreneurial trends.
- Enhanced decision-making processes, empowering the organization with a data-driven approach to future ventures.

Full-Stack Developer | Intern | IIIT Hyderabad *Aug 2020 - Sept 2020*
- Engineered and deployed a large-scale React/Node.js web application, serving thousands and enhancing user scalability.
- Implemented advanced data visualization techniques with D3.js to enhance user interaction and data comprehension.
- Led performance optimizations, significantly improving load times and scalability with efficient coding and server adjustments.

PROJECTS

ML Waste Segregation System (Python, TensorFlow, OpenCV, ML) *Dec 2023*
- Engineered CNN model achieving 93% accuracy in classifying waste into 4 categories, enhancing efficiency in waste management.
- Seamlessly integrated with smart bins to automate sorting, drastically cutting down on manual sorting time and efforts.

Maze Solver using Computer Vision (Python, OpenCV, ML) *Nov 2023*
- Created a solution that autonomously navigates 2D mazes, demonstrating advanced pathfinding capabilities.
- Streamlined the pathfinding process, contributing to advancements in robotic mobility and operational efficiency.

Real-Time Road Sign Detection, Recognition, and Driver Guidance System (DL, YOLOv7) *April 2023*
- Utilized YOLOv7 within a two-layer neural network to identify and classify road signs with 96% accuracy.
- Integrated a feedback mechanism to provide instant guidance to drivers, improving road safety measures.

News Classifier using Kafka (Python, Kafka, TensorFlow, NLP, Spark, Docker, MongoDB) *Feb 2023*
- Built a system that classifies news articles in real-time, streamlining the delivery of categorized content.
- Utilized Kafka for efficient data handling, enabling the processing of large volumes of news articles with minimal delay.

AI-Powered Environmental Adaptive Assistant for the Visually Impaired (TensorFlow, Deep Learning) *Dec 2022*
- Developed a solution with YOLOv5 for real-time object detection, 90% accuracy in obstacle recognition for the visually impaired.
- Introduced audio guidance for navigation, increasing the mobility and independence of visually impaired users.

Cloud-based e-commerce application using flutter and firebase (Flutter, Firebase, Dart, Android Studio) *June 2022*
- Led the development of a cloud-based e-commerce application, offering a seamless shopping experience.
- Integrated advanced features like authentication and in-app transactions, boosting the platform's functionality and security.

Software for polyclinic in python (Python, Django, HTML, CSS, SQLite) *Nov 2021*
- Constructed a software, enhancing administrative efficiency from appointment setting to patient record management.

PUBLICATIONS

Research Paper | International Journal *Sept 2021*
Led the authorship of "A Hybrid Method to Enhance the Prediction of Hazardous Asteroids using XGBOOST Classifier with XGBCLASSIFER based Feature Selection Method" Volume 8 Issue 9, International Research Journal of Engineering and Technology (IRJET). My pioneering research introduces a novel method to significantly improve the accuracy of hazardous asteroid predictions, showcasing the potential of advanced machine learning techniques in space threat assessment.

ACTIVITIES

Summer Analytics 2021 | Consulting and Analytics Club, IIT Guwahati *June 2021*
Mastered a comprehensive curriculum covering advanced data analytics, ML algorithms, and statistical modeling techniques. Applied these skills in hands-on projects, analyzing real-world datasets to derive actionable insights and build predictive models.

SKILLS

Languages: Python, HTML/CSS, JavaScript, Node, C, C++, Shell Scripting, Java
Data Science: Data Exploration, Data Quality Assessment, Feature Engineering, Machine Learning, Data Visualization, NLP
Frameworks: React JS, Angular JS, Express JS, Flask, Django, Fast API, scikit-learn, Torch, TensorFlow
Tools: Databricks, Spark, Docker, Microsoft Office, Vagrant, Git, Jira, VSCode
Databases: MySQL, MongoDB, Redis
Cloud Platforms & OS: Linux, Windows, Google Cloud Platform (GCP), Docker, Amazon Web Services (AWS), Microsoft Azure
Additional Skills: Kafka, NLP, JSON, XML, Hadoop, CLIPS, Android Studio