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.

PROFESSIONAL SUMMARY

- 7+ years of extensive Python hands-on experience, applied in AI/ML, data science, and automation, significantly enhancing project efficiency and driving innovation across diverse applications.
- 6+ years of hands-on software development experience, proficient in Python, JavaScript, and Scala. Delivered multiple full-scale, full-stack applications and complex data management solutions, demonstrating strong coding and architectural skills.
- Skilled in building and managing cloud solutions using Azure, AWS, and Databricks. Expert in setting up robust CI/CD pipelines with Jenkins, ArgoCD, and GitHub Actions, optimizing deployment processes and enhancing infrastructure resilience.
- Experience with 10+ projects in key technological areas such as Computer Vision, Deep Learning, Machine Learning, Android App Development, and Full Stack Development, leading to high-impact results and advanced application development.
- 2+ years of profound mentorship and academic engagement, actively teaching and guiding students and peers in advanced computational techniques and projects, fostering a collaborative learning environment and enhancing team capabilities.
- Successfully led the development of 8 major projects during academic tenure—3 projects during bachelor's and 5 projects in masters—showcasing leadership, project management, and technical problem-solving skills.
- Certified in Azure, DataBricks and AWS cloud technologies, with a strong background in deploying scalable and secure cloud applications and services, further broadening capabilities in cloud-based solutions.
- Active contributor to open-source projects and tech community forums, enhancing personal development and keeping abreast of the latest industry trends and technologies.

EDUCATION

Master of Science | Computer Science | *May 2024*
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

Graduate Student Assistant | CEDC | University of Colorado Denver *Jan 2023 - May 2024*

- **Research Assistance:** Assisted in a research project focusing on AI/ML applications in educational technologies.
- **Student Mentorship:** Provided support to students in enhancing their Python programming abilities through detailed code reviews and dedicated debugging assistance.
- **Student Engagement:** Represented the university and coordinated student outreach, managing university events to foster active engagement.

Data Engineer | 9th Networks INC *Aug 2020 - Aug 2022*

- **Data Lake Enhancement:** Worked on the enhancement and sustenance of data lakes and data pipelines for better insight into telemetry data.
- **Data Integration:** Managed file sizing and structured semi-structured data loading into Snowflake using Snow-Pipe.
- **Scripting and Development:** Developed scripts in Python and Scala for data analysis and quality testing.
- **ETL Process Management:** Managed complete ETL lifecycle including modeling, ingestion, transformations, and aggregations.
- **CI/CD Implementation:** Utilized Docker within Palantir Foundry for CI/CD pipeline builds, tests, and deployments.
- **Data Quality and Testing:** Conducted data profiling and quality tests using Python to assess data integrity and accuracy.
- **Visualization and Deployment:** Deployed data visualization dashboards using Plotly-Dash, enhancing data interpretability.

Full-Stack Developer | IIIT Hyderabad *June 2020-Aug 2020*

- **Web Application Development:** Developed and deployed a large-scale React/Node.js application for enhanced scalability.
- **Data Visualization:** Implemented D3.js for advanced data visualization, improving user data interaction.
- **Performance Optimization:** Optimized code and server configurations, significantly improving application load times.
- **Scalability Solutions:** Addressed scalability challenges by implementing efficient coding practices and server adjustments.

SKILLS

Programming Languages	Python, JavaScript, Java, C, C++, HTML/CSS, Node.js, Shell Scripting
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, OpenCV, YOLOv5, YOLOv7
DevOps Tools	Docker, Jenkins, ArgoCD, GitHub Actions, Terraform, Vagrant
Tools	Databricks, Spark, Microsoft Office, Git, Jira, VSCode
Databases	MySQL, MongoDB, Redis, SQLite, Snowflake
Cloud Platforms & Operating Systems	Linux, Windows, Microsoft Azure, GCP, AWS, Docker
Additional Skills	Kafka, JSON, XML, Hadoop, CLIPS, Android Studio, Data Integration, ETL Process Management, Real-Time Data Processing, IoT Integration, Security Implementation
Application Development	Android Studio, Flutter
Documentation/Markup Languages	Markdown, JSON, XML

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*
- Created a fully integrated clinic management system, employing Django REST framework for a scalable backend and a responsive front-end designed with HTML5 and CSS3.
- Implemented comprehensive security measures including data encryption and user role management to safeguard patient data.

CERTIFICATIONS & PUBLICATIONS

Microsoft Certified: Azure Data Engineer Associate *April 2024*

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.

ML Program | Rinex, Entrepreneurship Cell IIT Kharagpur *July 2021*
- Pioneered the implementation of analytical frameworks to interpret business data, deriving actionable insights for strategic decision- making in marketing and sales.
- Engineered predictive models, enhancing the understanding of market trends and consumer behavior, directly impacting sales strategies and operational efficiencies.