R Sumedh

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Introduction

I am an undergraduate student pursuing a degree in Computer Science and Engineering, with a strong interest in machine learning, deep learning, data analytics, web development and networking. I have cultivated extensive problem-solving skills and possess a solid understanding of various data structures. Driven by a passion for learning and a commitment to solving complex problems with a focus on deep comprehension, I aspire to develop innovative technologies that have the potential to create a significant impact on the future.

Education

Bachelor of Technology in Computer Science, PES University, Bangalore, India **2021 – 2025**

- **GPA:** 8.91 • 3-time MRD and 3-time DAC Scholarship Awardee

Pre-University Education, VVS Sardar Patel PU College, Bangalore, India **2019 – 2021**

- **Grade:** 99.6% • **KCET Rank:** 437

Elementary Education, Sri Vani Education Centre, Bangalore, India **2009 – 2019**

- **Grade:** 94.3%

Projects

Automatic File Backup Service

- Developed a Backup Service leveraging Docker to containerize the application, enabling seamless and portable deployment for periodic folder backups to Google Drive.
- Integrated Google API Client for secure authentication and file storage, automating backup processes with Cron jobs within the Kubernetes ecosystem.
- Orchestrated Containers Using Kubernetes, optimizing scalability, fault tolerance, and resource management for reliable backup operations. Streamlined Deployment and Monitoring, employing YAML configurations and Kubernetes tools like kubectl to ensure efficient operation and easy debugging.

Stock Price Prediction using Machine Learning Techniques

- Developed a robust time-series forecasting model for predicting stock prices, focusing on historical price trends and seasonality.
- Utilized ARIMA to model linear relationships and ARIMAX to incorporate external factors such as market indicators and economic variables for improved predictive accuracy.
- Evaluated model performance using metrics such as Mean Absolute Percentage Error (MAPE) and Root Mean Squared Error (RMSE) to validate accuracy and robustness**.** Achieved approximately 86% prediction accuracy, demonstrating the effectiveness of combining ARIMA-based models with exogenous and seasonal factors.

Fusion-Net – A State-of-the-art Deep Learning model for Audio Separation

- Designed and implemented a deep learning model for target audio extraction from mixed audio signals, leveraging advanced neural network architectures. Focused on separating audio signals for up to 6 distinct speakers, ensuring clarity and precision in both noisy and non-noisy environments.
- Incorporated cutting-edge techniques in speech separation, including the use of convolutional neural networks (CNNs) and Transformers to model temporal and spectral features of audio.
- Optimized the architecture to enhance the Signal-to-Noise Ratio (SNR), achieving state-of-the-art results compared to existing benchmarks.

Skills and Extracurriculars

Programming Languages: C++, C, Java, Python, SQL, JavaScript, R, HTML, CSS, MatLab

Frameworks/Libraries: TensorFlow, PyTorch, Keras, Numpy, Scikit-Learn, ReactJS, NodeJS, OpenCV, Matplotlib, SpringBoot, ExpressJS, Spark, Kafka

Tools/ Software: Docker, Google Cloud, MySQL, AWS, Adobe Photoshop, Linux, Git, GitHub.

Other Skills: Intensive experience in programming with over **500+** questions solved in **Leetcode** in C+. I also hold a gold badge in python on HackerRank. I am also a contributor on Kaggle, having participated in multiple competitions.