VIRAJ SANAP

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EDUCATION

North Carolina State University **Aug 2023–May 2025**
Master of Science in Electrical Engineering; CGPA 3.83/4 *Raleigh, NC*
Courses: Random Processes, Neural Networks, Object Oriented Development, Cloud Computing, Computer Vision, Automated Learning and Data Analysis

Savitribai Phule Pune University **Aug 2016–May 2020**
Bachelor of Engineering Electronics and Telecommunication ; CGPA 7.93/10 *Pune, India*
Courses: Machine Learning, Digital Image & Video Processing, Data Structures & Algorithms, Digital Signal Processing, Linear Algebra, Vector Calculus

EXPERIENCE

Active Robotic Sensing Lab, NCSU **Apr 2024–Present**
Student Researcher *Raleigh, NC*
- Conducting comparative analysis of Neural Radiance Fields (NeRF) and Gaussian Splatting algorithms for 2D-to-3D image reconstruction, with the goal of synthesizing highly photorealistic 3D scenes from 2D image inputs to enable advanced scene generation and visualization capabilities.

Infosys Limited **Nov 2020–May 2023**
Senior Systems Engineer *Pune, India*
- Performed in-depth data analysis to drive insights and optimize web application performance, leveraged SQL for efficient database querying.
- Developed backend systems using Java and Spring Boot, resulting in a 30% reduction in server response time.
- Designed and optimized CRUD REST APIs, improving performance by 23% through implementation of security measures and multithreading.
- Deployed microservices on AWS infrastructure and conducted comprehensive API unit testing with Postman.
- Utilized Angular, Node.js, and Adobe Experience Manager to craft dynamic front-end experiences and elevate UI design by enhancing readability by 25% and boosting accessibility by 40%. Incorporated Swagger to document and streamline microservices development, accelerating API integration by over 2x.
- Implemented AGILE methodology, collaborating with cross-functional teams to deploy services bi-weekly, accelerating development and delivery by 10% for a leading US telecommunications client

TECHNICAL SKILLS

Languages : Python, C++, R, Ruby, Java, Typescript, MATLAB
Frameworks : TensorFlow, PyTorch, Keras, SpringBoot, Angular, ReactJS, Rails, NodeJS
Libraries: Numpy, Pandas, Scipy, Matplotlib, Seaborn, OpenCV, NLTK, Scikit-learn, spaCy]
Tools: GIT, Postman, JIRA, Tableau, MATLAB, Spring Tool Suite, Docker, Adobe Experience Manager
Database and OS: MySQL, MongoDB, PostgreSQL, Linux, Windows
Certifications: Microsoft Azure Cloud Fundamentals AZ-900, AWS Cloud Practitioner, Google Cloud Big Data and Machine Learning Fundamentals, Machine Learning and Generative AI with Python (Udemy)

PROJECTS

AI Image Authenticity Classifier
- Developed a deep learning model using convolutional neural networks (CNNs) in TensorFlow to classify whether an image was AI-generated or real with 85% accuracy
- Preprocessed and curated a diverse dataset of AI-generated and real images for model training and validation.Performed data augmentation techniques.

Sentiment Analysis of Customer Reviews
- Leveraged Natural Language Processing (NLP) techniques and libraries, such as NLTK and spaCy, to analyze and categorize customer feedback, enhancing insights and driving improved customer satisfaction.
- Developed ML model to categorize the feedback into positive, negative, and neutral sentiments, improving customer insights and satisfaction metrics.

Real-Time Facial Emotion Detection
- Developed a facial emotion recognition system using Convolutional Neural Networks (CNN) with TensorFlow, achieving 70% accuracy in classifying emotions from video frames in real-time.
- Integrated OpenCV for facial feature extraction, curated emotion datasets for training the model, and optimized architecture/hyperparameters for improved real-time analysis via webcam.

Youtube Statistics Data Analysis
- Performed Exploratory Data Analysis on Youtube Statistics Dataset from Kaggle and performed data preprocessing and feature engineering using Python libraries like Pandas, NumPy, and Matplotlib.
- Engineered and tuned machine learning models like Random Forest Regression to predict channel earnings with high precision, minimizing error rates through model tuning techniques