SITHARTH VARSAN S

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CAREER OBJECTIVE

Secure a role in a dynamic and forward-thinking organization that values creativity, teamwork, and innovation. Leverage expertise to drive business growth and develop impactful solutions. Embrace collaborative leadership and strategic contributions to deliver lasting impact. Thrive in a culture of excellence and integrity.

EDUCATION

Shiv Nadar University, B.Tech in Artificial Intelligence and Data Science **Sept 2022 – May 2026**

- **Coursework:** Machine Learning, Deep Learning, Artificial Intelligence, Data Science, Data Structures, Design and Analysis of Algorithms

Green Park International Sr Sec.School, Higher Secondary Education (12th grade) **June 2021 – August 2022**

- Completed Senior Secondary Education with a strong foundation in Mathematics and Science.

PROJECTS

Harmful Brain Activity Classification with KerasCV and Keras **github.com/SVSNU/rep**

- Developed a **Harmful Brain Activity Classification** system using **KerasCV, Keras, TensorFlow, and Python**, leveraging deep learning for real-time EEG signal analysis and abnormal brain pattern detection.
- Optimized model efficiency for **high accuracy and low latency** using **CNNs, transfer learning, and computer vision techniques**, making it suitable for real-time healthcare applications.
- Tools Used: Python, KerasCV, Keras, TensorFlow, CNN, Transfer Learning

Disaster Tweets Classification using NLP **github.com/SVSNU/rep**

- Developed a **Disaster Tweet Classification System** using **NLP and Embedding Techniques** to identify informative tweets during crisis situations.
- Utilized **TF-IDF**, **Word2Vec**, and **SBERT (Sentence-BERT)** to generate both statistical and contextual embeddings for tweet representation.
- Applied **Logistic Regression** for binary classification of tweets, achieving reliable performance on disaster-related tweet datasets.
- Performed comparative analysis of embedding methods to assess their impact on classification accuracy and semantic understanding.
- Tools Used: Python, Scikit-Learn, Gensim, Sentence-Transformers, Pandas, NLTK, Matplotlib.

Coronary Heart Disease Prediction using Machine Learning **github.com/SVSNU/rep**

- Developed a **Coronary Heart Disease Prediction** system using **Machine Learning**, analyzing patient health data to assess heart disease risk.
- Optimized model performance with **XGBoost, Random Forest, and Neural Networks**, ensuring high precision and reliability in medical diagnostics.
- Tools Used: Python, Scikit-Learn, TensorFlow, XGBoost, Pandas, Matplotlib.

DDOS Detection Using Machine Learning **github.com/SVSNU/rep**

- Developed a **DDoS Detection System** using **Machine Learning**, analyzing network traffic patterns to identify and mitigate attacks in real time.
- Implemented classification models such as **Random Forest, K-Mean Clustering, and Deep Learning**, achieving high accuracy in distinguishing between normal and malicious traffic.
- Tools Used: Python, Scikit-Learn, TensorFlow/PyTorch, Pandas, NumPy, Matplotlib, Seaborn.

License Plate Recognition : A Comparative Analysis of Three OCR Approaches **github.com/SVSNU/rep**

- Designed and implemented a robust **License Plate Recognition (LPR)** system using **PaddleOCR, EasyOCR**, and image preprocessing techniques for real-world vehicle image datasets.
- Conducted a comparative analysis of three OCR pipelines, evaluating performance across varying lighting conditions and image quality, achieving up to **83% accuracy**.

- Applied advanced image processing techniques: **grayscale conversion, Gaussian blur, adaptive thresholding, morphological operations, and Canny edge detection**.
- Tools & Technologies: Python, OpenCV, PaddleOCR, NumPy, Matplotlib.

TECHNICAL SKILLS

Languages: PYTHON, JAVASCRIPT, C, HTML , CSS
AI Agents: Simple Reflex Agents, Model-Based Reflex Agents, Goal-Based Agents, Learning Agents
AI Models: Ollama, RAG, Llama3.2 Fine Tuning, Crew AI
ML: Supervised Learning , Unsupervised Learning , Classification & Regression models.
Deep Learning: CNN, RNNs, GANS, LSTM, Bi-LSTM, Attention mechanism and Transformers.
NLP: Tokenization, Stemming, Lemmatization, Word Embeddings, Sentence Embeddings, HMM, Word2Vec/GloVe, Term Frequency-Inverse Document Frequency (TF-IDF), Bert Models.
Business Intelligence: Tableau , Excel
Framework/Libraries: TensorFlow - Keras, PyTorch, scikit-learn, Pandas, NumPy, OpenCV , pyTesseract, Selenium
Certifications: Deep Learning for Developers, Generative models for Developers, Introduction to OpenAI GPT Models, OpenAI Generative Pre-trained Transformer 3 (GPT-3) for developers, High Impact Presentations, Introduction to Data Science, Introduction to NLP.

ACHIEVEMENTS

Finalist - OpenHack 2024 - Indian Institute of Science (IISc), Bangalore **24th February 2024**
- Achieved **top 10** placement out of 1300 teams in a national hackathon. Went through to the finals with a finance project called **FinHelp**, showcasing proficiency in **Gen AI, Data-analysis, visualization, NLP**, and **image processing**.

Basketball Player – Shiv Nadar University **Sports Achievements**
- Secured **Third Place** in the **Guru Fest Inter-Collegiate Invitation Volleyball and Basketball (Men) Tournament**, conducted by Guru Nanak College.
- Achieved **First Place** in the **SNU Independence Cup**, conducted by Shiv Nadar University.

Deloitte Australia Data Analytics Job Simulation on Forage **April 2025**
- Completed a Deloitte job simulation involving data analysis and forensic technology. Created a data dashboard using Tableau. Used Excel to classify data and draw business conclusions.