SWAGATH BABU

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EDUCATION

University of California, Los Angeles Los Angeles, CA

Master of science, Electrical and Computer Engineering |GPA: 3.33 /4.0 Sept 2022-Jun 2024

Coursework: Neural Network & deep learning, Natural Language processing, Computer vision, Digital speech processing, Linear Programming, Large Scale Social & Complex Networks Design & Algorithms.

Visvesvaraya Technological University, B.M.S College of Engineering Bangalore, INDIA

Bachelor of Engineering, Electrical and Electronics | GPA: 8.58/10 Aug 2015-Sep 2019

Coursework: Mathematics & probability, statistics, Object oriented Java Programming, C Programming, Digital Signal Processing.

SKILLS

Programming Language: Python, Java, Arduino, C, and Familiar with MATLAB, HTML, CSS.

Tools and Tech: Machine Learning, Deep Learning, NLP, tensorflow, PyTorch, scikitlearn, Data Structure & Algorithms, NumPy, Pandas, Matplotlib, Seaborn, NLTK, spaCy, container, docker, flask, Azure Web App, AWS cloud ECR & EC2.

Soft skills: Delivered over 100 presentations, skilled in cross-functional collaboration, proficient in Microsoft Office and documentation.

PROJECT

End to End Machine learning: [python, vscode, flask, Regression, Decision tree, KNeighbors] UCLA, USA

- Performed EDA on a Kaggle dataset of student performance, which involved analyzing both categorical and numerical features.
- Developed & implemented modular code for data ingestion, transformation, logging & model training using regression models.
- Utilized R2 score as evaluation metrics, to determine best model for training & testing dataset with hyperparameter tuning.
- Deployed the model using Flask & gained experience on CI CD pipelines & github action using AWS ECR & EC2 instance.

Analyzing EEG Signals using Neural Networks and Deep Learning: [python, tensorflow] UCLA, USA

- Conducted a project comparing deep learning architectures using EEG signals from nine subjects.
- Developed and fine-tuned CNN-LSTM model achieving 71.5% accuracy with hyperparameter tuning and regularization.
- Improved model performance for difficult classification and class imbalance through root cause analysis and effective solutions.
- Evaluated CNN, LSTM, GRU, and cascaded models, determining cascaded CNN + LSTM outperformed others on this dataset.

Speaker Region Identification: [python, Colab, XGBoost, SVM ensemble] UCLA, USA

- Applied various feature extraction techniques to accurately classify speakers from 5 different cities of US dataset.
- Improved clean data and noisy data accuracy by 9.75% and 14.7% respectively above baseline model through feature selection.
- Implemented state-of-the-art non-stationary noise reduction techniques with spectral gating.

Recommendation System: [python, NLP, nltk] UCLA, USA

- Developed a content-based movie recommender system utilizing preprocessing techniques, exploratory data analysis, and stemming using nltk, scikit-learn and NumPy libraries to recommend films based on plot summaries.
- Utilized cosine similarity score to enhance accuracy and improve recommendations for user.
- Leveraged Kaggle TMDB 5000 movies dataset for movie information to extract insights.

Autonomous path traversal plantation robot: [python, computer vision, Robotics] EYANTRA- INDIA

- Developed an algorithm to detect real-time shape and color of indicators using Python, OpenCV and Numpy.
- Implement image overlaying functionality using thresholding & bitwise operations for image segmentation.
- Experienced in designing and implementing image processing algorithms for real-time applications, such as controlling robotic systems based on image analysis of the environment.

EXPERIENCE

Dell Technologies: Inside Product Specialist: [Data Collection, Analysis, storage] Bangalore, INDIA | Nov 2019-Aug 2022

- Achieved $35 million in revenue by designing and implementing robust storage and server solutions for CPU and GPU intensive workloads. Collaborated with US solution architects to ensure seamless integration and optimal performance.
- Built an asset inventory using data from many sources spanning more than 7 years to increase sales opportunities.
- Collaborated with internal business units, including the data protection and unstructured data teams, to achieve business goals.
- Presented solutions to stakeholders based on trend analysis to support machine learning and AI projects with cloud deployment.

Indian Institute of Science (IISc): Research Intern: Bangalore, INDIA | Jun 2018-Jul 2018

- Implemented an Automatic Door Security System using an ARM Cortex M4 controller in embedded system.
- Developed an algorithm using embedded C for obstacle sensing, motion detection, and actuator control for security.
- Experienced in GPIO and UART programming, for seamless communication between hardware & software components.

B-Automate Pvt Ltd: Co-founder and Software Engineering : Bangalore, INDIA | Jan 2017-Feb 2019

- Adopted a flexible design tactic aided us to develop end-to-end solutions that are customizable & met the needs of clients.
- Experienced in developing wireless solutions that utilize technologies such as Wi-Fi and Bluetooth, leveraging these technologies to build automated home appliances and other smart devices.