Swaraj Khan P

+91 8618893815 swarajkhan2003@gmail.com LinkedIn Github LeetCode Portfolio YouTube

Education

Dayananda Sagar University, Bengaluru **2021 - 2025**
B.Tech in Computer Science & Engineering *7/10 CGPA*

The Amaatra Academy, Bengaluru **2020 - 2021**
Class 12 PCMC *79%*

Work Experience

Nokia **Mar '24 – July '24**
Chatbot Development Intern *Bangalore*

- Developed an AI powered chatbot for support engineers to assist with log analysis during testing.
- Provides solutions for ticket related problems
- Uses NLP to help employees understand log messages by providing suitable answers to their queries.

IIMB **Feb '24 – June '24**
Contribution to Trading Bot *Bangalore*

- Built a trading bot with Python based on Moon's position.
- Analyzing 10 years of historical data from Yahoo Finance.
- Identifying buy/sell trends and popular stocks based on the full moon impact.

Disys **Jul '23 – Aug '23**
Stroke Prediction Intern *Bangalore*

- Built a model from patient database to predict heart strokes.
- Performed data cleaning, manipulation, and handled missing values.
- Conducted feature selection and utilized confusion matrix for evaluation.
- Visualized data using Matplotlib, including correlation matrix and bar graphs.
- Implemented algorithms such as Random Forest (0.945), Gradient Booster (0.941), and Logistic Regression (0.754).

Projects

Auto ML Pipeline **Source code**

- I created a GitHub repo for a project called Auto ML pipeline which automated machine learning tasks including image segmentation, LSTM prediction, and CSV data analysis.
- This pipeline aimed to simplify the process of implementing machine learning models for various tasks, providing a seamless experience for researchers and practitioners alike.

Binary Image Classification with Deep Neural Networks **Source code**

- I explored image classification using deep neural networks in the "Cat vs. Dog" project, assessing the performance of 2-Layer (72% accuracy) and L-Layer (80% accuracy) neural network models.
- Detailed architecture, implementation, and performance metrics in a Jupyter notebook.
- The future objectives involved experimenting with different architectures, delving in1 to convolutional neural networks (CNNs), and expanding the model to tackle various image classification tasks.

Autonomous Driving - Car Detection **Source code**

- I detected objects in a car detection dataset.
- Implemented non-max suppression to increase accuracy.
- Implemented intersection over union.
- Handled bounding boxes, a type of image annotation popular in deep learning.
- Achieved an accuracy of 89% on the test set for detecting cars.

Emojify **Source code**

- Created an embedding layer in Keras with pre-trained word vectors.
- Explained the advantages and disadvantages of the GloVe algorithm.
- Built a sentiment classifier using word embeddings.
- Built and trained a more sophisticated classifier using an LSTM.
- Achieved an accuracy of 87% on the test set.

Deep Learning & Art: Neural Style Transfer **Source code**

- Neural Style Transfer (NST) used a previously trained convolutional network, and built on top of that. The idea of using a network trained on a different task and applying it to a new task is called transfer learning.
- Following the original NST paper, I used the VGG network. Specifically, I used VGG-19, a 19-layer version of the VGG network. This model had already been trained on the very large ImageNet database.

Publications

Automated Q and A Chatbot: Harnessing AI for Efficient Information Retrieval **2024**

ICCMLAI *Pune, India*

- Developed a PDF-based Q & A chatbot application that efficiently retrieves answers using predefined content without AI or NLP.
- Implemented PDF parsing techniques to extract and structure Q & A pairs for quick lookup and response.
- Streamlined the system for high accuracy and low latency in response times, making it suitable for real-time applications.
- Presented findings at the International Conference on Computer Science, Machine Learning, and Artificial Intelligence (ICCMLAI) in Pune, highlighting innovative methods for non-AI-based information retrieval systems.

Technical Skills

Languages: Python, MySQL, C++, R
AI/ML: Neural Networks, Transformers, Hyper Parameters Tuning, Convolution Neural Networks, Sequence Models, TensorFlow, Pandas, Numpy
Web Technologies: Streamlit, Web Scraping, Langchain, Flask, FastAPI
Developer Tools: Chrome drive, VS Code, GitHub

Achievements

FLASK Hackathon **2024**

Secured 2nd Place *Dayananda Sagar University*

- Built an interactive user friendly interface where an user can track his expenses and perform budget planning.
- Got selected being in top 1.4% out of 100 students who applied, got a cash price of Rs 1000/-.

Debate Competition **2023**

Secured 2nd Place *Dayananda Sagar University*

- I had competed against 20 teams with multi disciplinary topics ranging from EV vs Petrol till AI vs ManKind
- It was a mind-blowing 2