

SWARAJ KHAN P

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A motivated Computer Science student with a strong passion for Python programming and machine learning. Seeking an internship to apply theoretical knowledge in real-world projects, enhance software development skills, and advance expertise in machine learning techniques.

Education

Dayananda Sagar University, Bengaluru <i>B.Tech in Computer Science & Engineering</i>	2021 - 2025 7/10 CGPA
The Amaatra Academy, Bengaluru <i>Class 12 PCMC</i>	2020 - 2021 79%

Work Experience

Nokia <i>Chatbot Development — Intern</i>	Mar '24 – July '24 Bangalore
<ul style="list-style-type: none">Engineered an AI-powered chatbot for Nokia's ticketing and testing teams, automating log issue resolution and reducing manual workload by 40%.Enhanced chatbot query accuracy by 25% through advanced NLP techniques, optimizing response relevance and user satisfaction.Integrated real-time database retrieval, cutting response times by 30% and improving overall operational efficiency.	
IIMB <i>Contribution to Trading Bot</i>	Feb '24 – June '24 Bangalore
<ul style="list-style-type: none">Designed a Python-based trading bot that leveraged 10 years of Yahoo Finance data to assess the impact of lunar phases on stock performance.Discovered and integrated lunar-correlated buy/sell trends, achieving a 15% increase in trade efficiency and profitability.	
Disys <i>Machine Learning — Intern</i>	Jul '23 – Aug '23 Bangalore
<ul style="list-style-type: none">Built a heart stroke prediction model using Random Forest, Gradient Boosting, and Logistic Regression, achieving accuracies of 94.5%, 94.1%, and 75.4%, respectively.Streamlined data preprocessing, improving model performance by 10%, and visualized critical insights using Matplotlib to inform key medical decisions.	

Projects

Indian Constitution RAG-Chatbot	🔗 Source code
<ul style="list-style-type: none">Implemented a RAG chatbot using Gemini 1.5 Flash and Langflow, integrating advanced retrieval-augmented generation capabilities.Utilized Chroma DB for efficient and scalable vector storage and retrieval of movie-related data.Applied chunking and text splitting techniques for optimized data processing and context-aware response generation.Engineered prompts and employed AI embeddings to enhance the chatbot's accuracy upto 95% and relevance in answering queries about the Indian Constitution.	
Auto ML Pipeline	🔗 Source code
<ul style="list-style-type: none">Developed a GitHub repository automating machine learning tasks such as image segmentation, LSTM prediction, and CSV data analysis, reducing implementation time by 40% for users.Streamlined the application of ML models, creating a plug-and-play solution for researchers and practitioners to enhance productivity.	

Binary Image Classification with Deep Neural Networks

[Source code](#)

- Executed image classification in the "Cat vs. Dog" project using a 2-Layer (72% accuracy) and L-Layer (80% accuracy) neural network model, refining classification outcomes.
- Documented detailed model architectures and performance metrics in Jupyter, paving the way for future exploration of CNNs to increase accuracy in diverse classification tasks.

Autonomous Driving - Car Detection

[Source code](#)

- Designed an object detection model for car detection, achieving 89% accuracy on test data, utilizing non-max suppression and intersection over union to enhance detection precision.
- Optimized bounding box annotations for accurate classification, improving model performance for real-world deployment.

Emojify

[Source code](#)

- Built an LSTM-based sentiment classifier with pre-trained GloVe embeddings in Keras, reaching 87% accuracy on the test set and evaluating the effectiveness of the GloVe algorithm for sentiment analysis.
- Enhanced sentiment analysis with advanced embeddings, contributing to a 15% performance increase over basic models.

Publications

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

2024

ICCMMLAI

Pune, India

- Built a high-performance PDF-based Q&A chatbot that delivers instant answers from predefined content, achieving sub-second response times without relying on AI or NLP techniques.
- Designed efficient PDF parsing methods to extract and organize Q&A pairs, enhancing retrieval speed and accuracy for real-time usage.
- Optimized the system for precise and rapid information retrieval, resulting in a 20% improvement in response efficiency.
- Presented at ICCMLAI, showcasing innovative, non-AI-based approaches for scalable, real-time information retrieval systems.

Technical Skills

AI/ML: Neural Networks, Transformers, Hyper Parameters Tuning, Convolution Neural Networks, Sequence Models, TensorFlow, Pandas, Numpy

Languages: Python, MySQL, C++, R

Web Technologies: Streamlit, Web Scraping, Langchain, Flask, FastAPI

Developer Tools: Chrome drive, VS Code, GitHub

Certificates

Deep Neural Networks with PyTorch

Coursera

Certification Link

Deep Learning Specialization by Andrew Ng (5 Modules)

Coursera

Specialization Link

Achievements

FLASK Hackathon

2024

Secured 2nd Place

Dayananda Sagar University

- Launched a robust budgeting interface that integrated personalized financial insights; achieved a milestone with over 10,000 total transactions recorded in the first month, enhancing overall user engagement and retention.
- Ranked in the top 5% out of 100 participants, securing a cash prize of 1,000 Rupees for the project.

Debate Competition

2023

Secured 2nd Place

Dayananda Sagar University

- Formulated compelling arguments on complex topics, including electric vehicles versus petrol and AI versus humanity, ultimately earning a top 5 placement among 20 competing teams, highlighting strong analytical and communication abilities.