B A V Y A S R E E C H I N N A S A M Y

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E D U C A T I O N

MASTER OF SCIENCE IN DATA SCIENCE | Bharathiar University| Coimbatore
85.5% July 2023 – May 2025

BACHELOR OF SCIENCE IN MATHEMATICS | PSGR Krishnammal College for Women|Coimbatore

88.26% Sep 2020 - May 2023

S K I L L S

- Programming Languages: Python, SQL, MATLAB
- Libraries & Frameworks : Pandas, NumPy, Scikit-learn, Matplotlib, TensorFlow
- Tools & Technologies : PostgreSQL, SPSS
- Development Platforms : Jupyter Notebook, Visual Studio Code
- Soft Skills : People Management, Strong Written and Verbal Communication
- Core Competencies : Data Science, Machine Learning, Deep Learning, Large Language Models (LLMs), Generative AI

P R O J E C T S

Spotify ETL Pipeline Project

- Built an end-to-end ETL pipeline to extract track data from Spotify API and load it into a MySQL database.
- Parsed and transformed metadata (track name, artist, album, duration, popularity) using regex and data processing.
- Executed analytical SQL queries to rank artists, compute average popularity, and categorize tracks by popularity.
- Automated data ingestion from a list of URLs with exception handling and dynamic insertion into a structured schema.

Email Assistant AI – Gmail Automation Using Generative AI

- Designed and developed an AI-powered assistant that integrates with Gmail to automate inbox management using the Gmail API and LLMs via OpenRouter.
- Implemented intelligent email classification (e.g., Personal, Job Offer, Application Update) and generated context-aware draft replies for priority messages.

BCG GenAI Job Simulation on Forage

- Built a rule-based financial chatbot as part of a BCG GenAI Consulting job simulation, interpreting financial data from 10-K and 10-Q reports.
- Utilized Python and pandas for data extraction and transformation, delivering accurate, user-friendly financial insights through structured logic.

Thorax Disease Detection Using Deep Learning Models

- Built a deep learning model using NIH ChestX-ray data for automated pulmonary disease classification.
- Designed and compared CNN and hybrid models (MobileNet/U-Net + Attention + Transformer) for improved accuracy and efficiency.
- Used Grad-CAM as a preprocessing step to convert images into heatmaps overlayed images, enhancing both model training and interpretability.

Diabetes Analysis And Prediction Using Python

- Conducted exploratory data analysis (EDA) on a dataset of over 750 records, identifying key correlations between features like glucose, insulin, and BMI using correlation heatmaps and pair plots.
- Developed a Random Forest and Decision Tree classifier model achieving 100% accuracy on test data, providing reliable predictions for diabetes diagnosis using Python (scikit-learn, pandas, NumPy).

RESEARCH AND PRESENTATIONS

ICAC 2024 Conference | Department of Computer Science, Bharathiar University. Sep,2024

Paper Title**:** *"A Comprehensive Review of the Attention Mechanism in Deep Learning"*

- Presented a comprehensive review of the attention mechanism and its applications in NLP, computer vision, and other domains which focused on the evolution of attention models, including Self-Attention and Multi-Head Attention.
- Discussed challenges, innovations, and future directions for attention mechanisms in deep learning architectures.

CERTIFICATES

- Data Analytics with Python – NPTEL | Issued Apr 2024
- Machine Learning for Data Science Projects - IBMSkillBuilds | Issued Jun 2024
- Python Project for AI & Application Development – IBM | Issued Sep 2022
- Python for Data Science AI & Development - IBM | Issued Sep 2022
- Data Science Methodology - IBM | Issued Aug 2022