

AJAY RAJKUMAR K

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An aspiring Computer Science engineer with curiosity to perennially learn new things in Software engineering, Data science. Strong collaborator with a deep understanding of team dynamics and the ability to adapt seamlessly to various working environments.

WORK EXPERIENCE

TATA CONSULTANCY SERVICES

Chennai, IN

Systems Engineer, AI Developer

Jul 2024 -

Developed a **data quality PoC** using **Python** and **statistical methods** to enhance dataset reliability, leveraging **Plotly** for interactive visualizations to present insights to stakeholders.

Built an **ESG KPI and vendor classification PoC** using **Python**, **scikit-learn**, and **sentence transformers** to harmonize ESG KPIs, with **z-score analysis** to detect anomalous vendors for procurement optimization.

Created a **GenAI-based PoC** using a **GPT-based model** to generate **Java custom annotations**, automating metadata tagging for improved code maintainability.

EDUCATION

VELLORE INSTITUTE OF TECHNOLOGY

Chennai, IN

B. Tech in Computer Science (with specialization in AI and Machine Learning) Sep 2020 - Jun 2024

Relevant Coursework: Data Structures, Algorithms, Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Operating Systems, Computer Networks, Video Analytics.

ZION MHSS

Chennai, IN

Higher Secondary

Jun 2019 - Mar 2020

Percentage: 94.67%

ZION MHSS

Chennai, IN

Secondary

Jun 2017 - Mar 2018

Percentage: 97.00%

PROJECTS

MUSIC GENERATION USING GAN

Jan 2023 - Apr 2023

Pioneered a BiLSTM-based Generative Adversarial Network (GAN), using Maestro v3's virtuoso piano data, which is then converted to a MIDI file.

Fine-tuned data selection using key performance metrics like key strike velocity and pedal positions, injecting nuanced musicality into generated scores.

Implemented using TensorFlow and NumPy, demonstrating proficiency in deep learning frameworks.

VIDEO SUMMARIZATION USING KEYFRAME EXTRACTION Jan 2023 - Apr 2023

Researched and implemented a novel, streamlined 3-step approach for concise video summarization.

The approach involves feature extraction from video frames, keyframe selection based on relevance and visual saliency, and caption generation using the selected keyframes.

Developed using TensorFlow, PyTorch, and NumPy for efficient processing.

DDoS DETECTION USING DEEP LEARNING

Aug 2022 - Nov 2022

Developed a XGBoost Regressor based Machine Learning model for better accuracy and faster training duration.

Reduced training time and improved model generalizability by significantly optimizing the dataset size through correlative analysis and feature selection.

Programmed using scikit-learn, TensorFlow, Pandas, and NumPy for diverse machine learning and data science skills.

MULTI-AGENT DEVICE WITH REINFORCEMENT LEARNING Aug 2022 - Nov 2022

Simulated stockroom robot with obstacle detection and collision avoidance using Reinforcement Learning.

Developed a Q-learning algorithm for adaptive decision-making and facilitated real-time obstacle avoidance by caching.

Executed using NumPy and Pandas, and visualized using Tkinter.

TECHNICAL SKILLS

Programming

Python, Java, C++, Oracle SQL

Frameworks

Tensorflow, Numpy, Pandas, scikit-learn, LangChain

Tools

Jupyter Notebook, Google Colab

Operating Systems

Windows, Linux

Certifications and Training

[AWS Solutions Architect](#),
[Google Professional ML Engineer](#),
[Microsoft Azure AI Engineer Associate](#),
[AWS AI Practitioner](#)