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.

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	Java, C++, Oracle SQL, Python
Frameworks	Tensorflow, Numpy, Pandas, scikit-learn
Tools	Jupyter Notebook, Google Colab
Operating Systems	Windows, Linux
Certifications and Training	Microsoft Security Compliance, Tensorflow, Reinforcement Learning