Sathish Kumaran

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Work Experience

Clinical Data Scientist Internship   Jul. 2023 - Present

MiiCare

- Developed a high-accuracy (97% accuracy, 96% F1-Score) Cough Detection Model for real-time use on a resource-constrained device (without using artificial neural network). Conducted extensive audio data collection, analysis, pre-processing, segmentation, and iterative model refinement. Implemented the real-time system to effectively detect the cough segment.
- Built a GRBAS rating model to assess voice data and generate corresponding GRBAS ratings as output.
- Conducted data visualization and EDA reports using Azure Data Bricks, identifying distinctive patterns within clinical data, particularly focusing on specific trends in individuals with the targeted disease.
- Developed an end-to-end dashboard system, with complex data processing algorithms, a specialized data query and caching setup, and plots using ECharts.

Projects

NN and DQN from scratch   Apr. 2023

- Implemented a neural network from scratch and utilized it to develop a Deep Q-Network (DQN) to train an agent for the Cartpole game.
- Additionally, built a custom gym environment and created a DQN using Tensorflow to train the agent.

ML from scratch   Mar. 2023

Implemented a series of machine learning algorithms from scratch while learning them, This projects contains many visualization and comparisons of how each algorithm learns.

TicTacToe AI   Dec. 2022

TicTacToe AI using Minimax algorithm with advanced features such as board state edit mode and multiple board sizes, and full control over the minimax algorithm search parameters such as depth and Alpha-beta pruning.

Education

B.Tech Artificial Intelligence & Data Science   2021 - 2025

Sri Muthukumaran Institute Of Technology (SMIT)

Technical Proficiencies and Tools

Programming Languages:

Python, C, C++, R, JavaScript, Typescript, Go, SQL

Technologies & Tools:

Linux, Pytorch, Tensorflow, Git, React, Next.js, Docker

Skills:

Software Development, Data Science, Machine Learning, Deep Learning, Data Visualization

Languages

Tamil: Native

English: Professional Working Proficiency