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 ANNs). Conducted extensive audio data collection, analysis, processing and iterative model refinement. Implemented the real-time system to effectively detect the cough segments.
- Contributed to the development of GRBAS Rating, Delirium Detection and Type 2 Diabetes Detection models using voice analysis.
- Implemented a highly customizable dashboard system for user data analysis, featuring a custom data caching mechanism and a lot of advanced data processing algorithms, with the user interface built using Streamlit.
- Conducted EDA on user data using Azure Data Bricks to identify patterns and trends.

Projects

MazeHarvest   Jan. 2025

A grid-based RL environment where an agent manages an ecosystem by controlling toxic plant spread and fighting moles, which are controlled by a multithreaded A-star search, in a toroidal world. I implemented PPO & RDQN algorithms using pytorch to train agents to survive the environment.

Rentit   Nov. 2024

A house rental app built with the MERN stack, featuring real-time chat and request updates powered by Socket.io, property search with geocoding, and hosted on Render.

NN and DQN from scratch   Apr. 2023

Implemented a neural network with SGD algorithm from scratch using numpy and used it to develop a Deep Q-Network (DQN) to train an agent for the Cartpole game.

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, Rust

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