ANURAAG RAMESH

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E D U C A T I O N

University of Michigan, Ann Arbor **2021 - 2023**

- Masters in Data Science - GPA: 3.95
    - Machine Learning (EECS 545), Data Mining (STATS 415), Linear Models (STATS 500), Data Science in Python (STATS 507)

VIT University, Vellore Campus **2016 - 2020**

- Computer Science Engineering (B.Tech)
    - **CGPA 9.24/10**

T E C H N I C A L S K I L L S

Python, R, SQL, C, C++, Java, CSS, JavaScript, PySpark, Jupyter, Microsoft Power BI , Keras, Tensorflow, Spark, Hadoop, Kafka, Airflow, Machine Learning, Tableau

P R O J E C T S

Evaluating team quality in international soccer using mixed-effect models **Jan 2023 – Apr 2023**

- Developed a bayesian mixed-effects model with over-dispersed goal count data to predict the historical quality of different soccer nations.
- Created a posterior distribution for goals scored based on random effects of different teams and oppositions per year. Utilized draws from this posterior to predict the results of the UEFA Nations League Finals in June 2023.

Solving Math word problems using a Large Language Model: GPT - 2 **Aug 2022 - Dec 2022**

- Implemented chain of thought prompting to get added context to solve complex word problems (GSM8K data)
- Developed a fine-tuned, chain of thought conditioned GPT – 2 model that gives a heightened accuracy of 26% over a normal language model like BERT which gives 6% accuracy.

Solving classic machine learning problems using a GNN neural network **Jan 2022 – Jun 2022**

- Using a combination of GNN and RL to solve a classic machine learning problem like the travelling salesman problem. TSP being a NP-hard and Fully - Integer programming problem does not have feasible solutions.
- Using a RL trick to use the outcome of a TSP solver to improve the results using deep learning.

Performed Exploratory Data Analysis on the Black Friday Dataset **Jan 2021 - Apr 2021**

- Created graphs for various data descriptors as well as interpreted the correlations between predictor and response.
- Used Tableau to generate graphs and figures from the dataset.
- Developed a prediction for the “Purchase” value using linear and polynomial regression. Finally, utilized a heuristic-based decision tree to get a MSE value of 2291.

Designed a Self-Learning AI Agent in a simulated game environment **Jan 2019 - April 2019**
(Under the Guidance of Prof. Illantheral K)

- Developed a Self-Learning AI in a game environment using Deep Reinforcement Learning.
- Used Keras to design a deep neural network based on the concept of Reinforcement Learning.

Developed a Movie Identification and Review System website **July 2018 - Nov 2018**
(Under the guidance of Prof. Anny Leema A)

- Used Angular and JavaScript JSON objects as the backend, which each object giving details about a particular movie.

A Human emotion detector (Expression) using OpenCV **July 2017 - Nov 2017**
(Under the Guidance of Prof. Navamani T)

- Developed an emotion detector using OpenCV a library that provides image processing tools.

Performed Text Extraction from natural images using Python **July 2018 - Nov 2018**
(Under the Guidance of Prof. Prabu S)

- Developed a text extraction code on python using OpenCV and Tesseract.
- Successfully extracted text from natural images except for low-light conditions.

Made a full-fledged IOT Based Pollution detector using Firebase **July 2018 - Nov 2018**
(Under the Guidance of Prof. Priya G)

- Developed an IOT system for pollution detection and show live graphs for the same.
- Created a hardware circuit on Arduino Uno using ESP8266 (Wi-Fi) to send data to nearby desktop and uploaded the data to a cloud system.

C O U R S E S U N D E R T A K E N

- A UC San Diego authorized course "Introduction to Big Data" offered by Coursera.
- A Cisco Authorized course "Network Protocols and Architecture" offered by Coursera.
- "Fundamentals of Digital Image and Video Processing" offered by Northwestern University.
- "Machine Learning" Course provided by Stanford University.
- "Google Developers Group" (GDG) for a year - learned Android development during the period and finally made a weather application using Android Studio.