

# Mownetharan A K S

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Bangalore

## EDUCATION

### Indian Institute of Technology Madras

Chennai

B.Tech in Aerospace Engineering

May 2022

- Coursework: Data Analytics, Applied Statistics, Probabilistic Systems Analysis & Applied Probability, Linear Algebra, Differential Equations, Complex Variables, Python for Data Science

## SKILLS & CERTIFICATIONS

- **Certifications:** Generative AI by Microsoft, Deep Learning with Tensorflow, Machine Learning, Computer Vision
- **Skills:** Python, EDA, Modelling, NLP, SQL querying, Pipelines, Vision, RAG & fine-tuning LLMs
- **Libraries:** Pandas, Scikit-Learn, Tensorflow, Numpy, ScraPy, PyTorch, Streamlit, Flask, OpenCV, PySpark
- **LLM packages:** Gemini AI, Llama 2, OpenAI, LangChain

## PROFESSIONAL EXPERIENCE

### IQVIA

Bangalore

Analyst

(Jan 2023 - \*)

- Developed an NLP tool using Gemini AI with the interface of Streamlit to perform text preprocessing, clustering, topic modelling and word frequency analysis from datasets like survey responses, comments, etc.
- Conducted Robustness Testing on a Price Elasticity model pipeline with comparative inflation analysis to evaluate pricing strategies on pharmaceuticals, ensuring strategic pricing decisions were data-driven.
- Enhanced various projects like AI Survey Automation, Market Segmentation, Persona Enrichment to improve target identification & market strategies with modelling and extrapolation techniques.

Associate Software Developer (AI/ML)

(Jul 2022 - Dec 2022)

- Built data pre-processing pipelines to collect & prepare datasets to be used for pre-trained text-based deep learning models.
- Deployed deep learning models like XClass, WeSH etc on pre-processed label data for text-based classification with 70+ classes
- Developed APIs to extract data from label PDF files into DOCX, XML and JSON formats

### The Prints Company

Remote

Machine Learning Engineer Intern

(Feb 2022 - Mar 2022)

- Deployed Generative Adversarial Network StyleGAN2 with PyTorch to generate designs similar to training data.
- Developed 5 new web-crawling spiders with ScraPy to scrape high quality design images from popular stock image sites.
- Handled data resizing & cleaned junk from 10,000+ scraped raw training images with VGG-16 clustering model.

## PROJECTS

### LLM Applications

(March 2024)

- Developed a generative movie script authoring tool using fine-tuned LLMs (Gemini) for plot exploration and script generation based on user input variables.
- Developed a RAG-based LLM application that performs Topic Modelling & Querying capabilities using LLAMA2 which makes use of Similarity Search with FAISS Index.
- Explored You-Only-Look-Once (YOLO) models to perform Object detection and tracking of CCTV data to generate customer & behavior insights and Generate reports using various LLMs.

### Transfer Learning for Natural Language Processing

- Implemented various pre-trained NLP text embedding models NNLM, USE, GNews Swivel from Tensorflow Hub.
- Performed transfer learning to fine-tune models of various dimensions on Quora Insincere Questions Dataset.
- Visualized performance metrics with TensorBoard for fine-tuned and high dimensioned version of all models.

### Term Deposit Marketing Classification

- Classified Term Deposit subscription with data from 40000+ calls made by a Portuguese banking institution.
- Trained and Tested Random Forest Classifier, Logistic Regression, Support Vector Machine & KNN models.
- Generated Synthetic samples from minority class to diagnose Class Imbalance with SMOTE method.

### COVID-19 Data Exploration & Analysis

- Explored COVID19 dataset, published by John Hopkins University along with World Happiness Report dataset.
- Visualized two datasets, revealing a surprising relationship between maximum infection rates and happiness factors

## LEADERSHIP EXPERIENCE

### Saarang (Cultural fest of IIT Madras)

Chennai

Publicity Coordinator

Mar 2018- Mar 2019

- Spearheaded a team of 50 ambassadors across various colleges to publicize Saarang 2019 in Tamil Nadu.
- Amplified the outreach with a 28% increase in footfall in Saarang from 70,000 in 2018 to 90,000 in 2019.