JOSE MOTI || CE17B118
PLACEMENT REGISTRATION NUMBER: 22/CE/22/118
GITHUB: LINK

EDUCATION AND SCHOLASTIC ACHIEVEMENTS

PROGRAM	INSTITUTE	CGPA / %	Year of Completion
Dual Degree in Civil Engineering	Indian Institute of technology, Madras	7.93	2022
Minor in Artificial Intelligence		**8.31**	
Class XII - CBSE	Vijayagiri Public School	95.0%	2017
Class X - CBSE	Greenvalley Public School	10.0	2015

Secured **97.34 percentile** (rank 3816 out of 2.1 lakh) in JEE Advanced and **99.29 percentile** (rank 3771 out of 11 lakh) in JEE Main 2017

COURSES AND CERTIFICATIONS

- Deep Learning Specialization
- SQL for Data Science Specialization
- Pattern Recognition and Machine Learning
- Probability, Statistics, Stochastic Process
- Exploratory Time Series Analysis[1]
- Statistics with Python Specialization[1]

Skills: Python | Pytorch | TensorFlow/Keras | SQL | Flask | Scikit-Learn | Linux | RASA | C++ | MS Excel | Apache Spark

COMPETITIONS AND ACHIEVEMENTS

Kaggle – Competitions **expert**

- Achieved Kaggle **rank 913** from 150,000+ competitors worldwide while securing **3 silver** medals in 5 competitions participated
- Worked on cloud **GPUs** and **TPUs** with real world datasets (100GB+) of **RSNA**(Radiological Society North America), **Google, SIIM** etc

AB-InBev Recommendation Challenge - National Finalist

- Implemented a hybrid **Collaborative filtering** model based on Variational Autoencoder for cross sell, up sell recommendations
- Prototyped a User Interface for the AB-InBev selling team using Flask as **backend** and HTML, CSS, Jinja2 for **frontend** design
- Achieved a validation RMSE of **0.06**, personalization index of **0.62;** Selected among **top 9** teams from 2000+ participants for Finale

Amazon ML Challenge – National Finalist

- Implemented multiple **LSTM** and **Attention** based models used for categorizing Amazon products to different browse groups
- Achieved an accuracy of **69.09** after ensemble and was selected among **top 10** teams as National Finalist from 3000+ participants

Tour Prediction Challenge – Runner Up

- Ensembled Light Gradient Boost (**LGB**) and **Catboost** models to predict cyclist tour preferences; Achieved **top 2** from 150+ teams
- Obtained a validation **Mean Average Precision** (MAP) score to **0.743** using **Bayesian** optimization of the hyperparameters

PROFFESSIONAL EXPERIENCE

Bitwise Academy
Internship
(May '20 -July '20)

- Improvised an AI driven **chatbot** for the company website using **RASA** open-source framework
- Researched on several RASA **NLU** and **Core** components like DucklingHTTPExtractor, **DIETClassifier** etc
- Achieved **intent classification, entity recognition** accuracies of **0.90+** using different pipeline strategies

PROJECTS

Google Landmark Retrieval

- Built **Efficientnets** for global features, **DELG**[3] for local features and images retrieved based on **cosine similarity** between features
- Obtained **GAP** (Global Average Precision) score of **0.518** while training on 1.5m+ images falling into **102k unique** landmarks

Business Analysis with SQL

- Analyzed Yelp database using **SQLite** following the **Entity Relationship** Diagram and gained insights on business reviews from users
- Performed an **A/B Test** on user browse data to find the **p-value** for selecting between null and alternate business hypotheses

Model **Optimization** with **AVX** (CS6886)[2]

- Improved runtime for **AlexNet** model from **35.3s to 3.8s** using **C++** AVX commands with output, input, weight stationary dataflows
- Decreased runtime for a forward pass of the convolutional layer from **0.375s to 0.125s** when data is **tiled** with tile size of 15

Tweet **Sentiment Extraction**

- Implemented **byte-level BPE** tokenizer and **Roberta** model with **huggingface** to find **sentence part** responsible for the sentiment
- Achieved a **Jaccard** score of **0.715** ensembling 10 models each trained on different **stratified,** cross-validated folds of train data

Computer Vision using CNN (CS7015)[2]

- Developed a basic **CNN** from scratch with **Pytorch** framework and obtained an accuracy of **0.70** on the CIFAR-10 dataset
- Refined the accuracy to **0.89** by fine-tuning pretrained Resnet18 model and tuning hyperparameters, **optimizers**, augmentations

ML Algorithms from **scratch** (CS5691)[2]

- Implemented **Bayes** Classifier, Bayesian Regression, Logistic Regression, **Adaboost** from scratch in Python **without sklearn** library.
- Analyzed for overfitting in polynomial **ridge regression**. Decreased test error to **0.001** from 0.155 by tuning degrees, regularization

POSITIONS OF RESPONSIBILITY

Envisage Coordinator
Shaastra
June '18 - Jan '19

- Collaborated in a team of 4 to create a large Speed Painting Bot that painted on a canvas of 2m height
- Designed the robot-canvas structure with **Creo** software and worked on image processing side
- Applied for patent under **Indian Provisional Patent** with Application number – **201941026780**

EXTRAS & CO-CURRICULAR ACTIVITIES

- Successfully completed one-year long **NCC** (National Cadet Corps) program organized by Indian Institute of Technology, Madras
- Problem solver at **Pearson, Studypool**; Solved 50+ high school level questions in areas of Mathematics, Physics and programming

[1] - ongoing courses, [2] – course project, [3] - DELG (Deep model for image retrieval)