

CHIRAYU MITTAL

ACADEMIC PROFILE			
Degree/Certificate	Institution	Percentage/CGPA	Year
B-Tech	Ceramic Engineering IIT (BHU), Varanasi	7.77	2024
CBSE (XII)	Delhi Public School, Faridabad	84.40	2019
CBSE (X)	Delhi Public School, Faridabad	93.10	2017
SKILLS			
R, Python, Consulting, Probability, Statistics, JavaScript, React, Django			
INTERNSHIP/TRAINING			
Market Analyst - Axxela		20/05/23 - 15/07/23	
Interest rate market fundamentals, Derivatives market prediction using mathematical modelling			
<ul style="list-style-type: none">Researched SOFR 3-Months contracts, analyzed datasets, generated strategies achieving 75% win ratioResearched Black Scholes model for derivatives, built related mathematical model from scratch to predict real time data, generating 90% leading predictions. Compared the result with standard regression predictionsPreprocessed data based on market trends, time frames and strategies, automated signals and execution			
PROJECTS			
NLP Based Machine Translation with Attention Mechanism			
<ul style="list-style-type: none">Developed a neural machine translation (NMT) model for English to Spanish translation achieving 72.7% accuracyFine-tuned the NMT model using techniques such as beam search to optimize translation outputFurther Implemented an attention mechanism achieving 82.05% accuracy and capture context-aware words			
Chest X-Ray Diagnosis			
<ul style="list-style-type: none">Implemented DenseNet to train on 865 training image dataset to identify diseases like Edema, Effusion, etcSolved for class imbalance problem by using cross entropy loss function to make sure results are not biasedUsed AUC curve for evaluation. Achieved 0.896 score on cardiomegaly. Used gradCam for visualizations			
Canine Classifier: Deep Learning for Precise Dog Breed Recognition			
<ul style="list-style-type: none">Designed and implemented a convolutional neural network (CNN) for the task of classifying 120 distinct dog breedsLeveraged transfer learning by fine-tuning pretrained models (ResNet, Inception) on the ImageNet datasetExperimented with custom CNN architectures, optimizing layer depths, kernel sizes, and activation functions			
SEM Particle size measurement (Under Dr. Kundan Kumar)			(Ongoing)
<ul style="list-style-type: none">Researched SEM images and particles, implemented Hough transform to find particle boundary , radiusStudied Yolov5 architecture for segmenting the images. Used Skimage Library to preprocess imagesUsed Transfer Learning to train Yolov5 on custom input images, finetuned the hyperparameters			
Twitter Sentiment Analysis			
<ul style="list-style-type: none">Trained a Support Vector Machine on 16,000 Tweets on an Indian Politics to classify them into 3 classesTokenized and lemmatized the words and then used WordNet vectorizer to convert text to vectorsMade predictions on 1000+ Tweets with an accuracy of 83.5%, further fine tuned hyperparameters.			
POSITION OF RESPONSIBILITY			
Director - HULT Prize IIT (BHU)			1 Year
<ul style="list-style-type: none">Achieved a 2X increase in participation from last year in HULT Prize regionals.Conducted first ever KeyNote session and Training sessions aimed at fostering on-ground growth for startups.			
HONOURS AND ACHIEVEMENTS			
Inter-IIT Bronze Silicon Labs			1 month
<ul style="list-style-type: none">● Inter-IIT project – IoT based solution in Fem-tech sectorWon the Bronze Medal at Inter-IIT Tech Meet 10.0, 2022 amongst 23 participating IITsInnovated a Tech-led, IoT based solution for monitoring women’s health, specially in rural populationAnalysed the stakeholders and devised an end-to-end business plan around the suggested innovation			

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