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Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2024	

## INTERNSHIPS & RESEARCH EXPERIENCE

- **EMAIL CLASSIFIER | DATA SCIENTIST INTERNSHIP | KOTAK MAHINDRA BANK** (DEC'22-JAN'23)
  - Transformed manual labeling by leveraging an automated multi-class text classifier powered by **Einstein API** Salesforce, ensuring precise classification of emails into their respective categories with **90% precision**.
  - Used diverse set of emails and adeptly preprocessed this dataset using **Excel and Python** each meticulously tagged with one of the three distinct categories.
  - Effectively streamlined the classification process and enhanced organizational efficiency.

## COURSE & TECHNICAL PROJECTS

- **MUSIC GENRE CLASSIFIER | IML COURSE PROJECT | PROF. AMIT SETHI** (April'23-May'23)
  - Created a robust Music genre classification system by training **Four traditional machine learning classifiers**.
  - Trained **VGG16** model based on **Convolutional Neural Networks (CNNs)** to analyze **Audio spectrograms** and categorize music files based on their genre.
  - Achieved outstanding results with an **Ensemble classifier** that combined the strengths of the deep learning and traditional machine learning approaches, attaining an **AUC value of 0.894** on the Audio Set dataset.
- **NUCLEUS SEGMENTATION | IP COURSE PROJECT | PROF. AMIT SETHI** (SEPT'22-NOV'22)
  - Implemented an advanced **UNet model** for **semantic segmentation**, leveraging **TensorFlow + Keras** on the challenging International MoNuSeg training dataset.
  - Utilized **Watershed segmentation** on probability maps generated by the UNet model, successfully segmented individual nuclei from tissue Images with **0.70 precision**.
- **FACE RECOGNITION WITH SIAMESE NETWORKS | AML PROJECT | PROF. AMIT SETHI** (SEP'23-NOV'23)
  - Implemented a **Siamese neural network** using a metric learning approach with cosine similarity and cross-entropy loss to accurately predict whether a pair of images correspond to the same person.
  - Enhanced model generalization through extensive **image augmentation** and systematically experimented with regularization techniques and hyperparameters, leveraging a pre-trained **Imagenet** model for improved feature extraction.
- **LSTM-BASED STOCK TRADING SYSTEM | AML COURSE PROJECT | PROF. AMIT SETHI** (SEP'23-NOV'23)
  - Designed and implemented a **Long Short-Term Memory (LSTM)** neural network for predicting stock prices, leveraging deep learning techniques to capture temporal dependencies in historical stock data.
  - Conducted thorough data preprocessing by cleaning, normalizing, and handling missing values in historical stock data to ensure the LSTM model's robustness and effectiveness.
- **HAND GESTURES RECOGNISER | LLM'S COURSE PROJECT | WEB AND CODING CLUB** (JULY'23-AUG'23)
  - Created a powerful gesture recognition system utilizing a pre-trained **YOLOv5S** model fine-tuned on a specialized dataset containing annotated images of hand gestures.
  - Achieved high precision in predicting 21 different alphabetic gestures with a strong **recall of 0.85**.
  - Designed an intuitive user interface using **Gradio** to allow users to input images, and receive annotated output images showcasing the predicted gestures with associated probabilities.
- **SENTIMENT ANALYSER | LLM'S COURSE PROJECT | WEB AND CODING CLUB** (JULY'23-AUG'23)
  - Engineered a comprehensive sentiment analysis system using a custom-built neural network architecture. The model processes movie reviews and outputs the sentiment of the review.
  - Designed a multi-layer **Recurrent neural network (RNN)** comprising an Embedding layer, LSTM layers, Dropout layer, Linear layer, and a Sigmoid layer to generate probabilistic sentiment predictions.

## TECHNICAL SKILLS

- **PROGRAMMING AND SCRIPTING LANGUAGES:** Python, MySQL, C++, VHDL, LATEX, Assembly(8051).
- **SOFTWARE AND PACKAGES:** CRM Analytics Salesforce, PyTorch, TensorFlow, Pandas, NumPy, Excel, GitHub.

## POSITION OF RESPONSIBILITIES AND SCHOLASTICS ACHIEVEMENTS

- Achieved the **Best Project Award** from the Electrical Engineering Department at IIT Bombay among 200 students for the development of **RFID-based Attendance Management System**.
- Mentored a team of 6 students in an **AI project** as part of the **Summer of Science'23** program.

## MAJOR COURSES UNDERTAKEN

- **PROGRAMMING COURSES:** Advanced topics in ML (AML), Advanced Methods in Satellite Image Processing, Intro to ML (IML), Image Processing, Computer Programming and Utilization (C++).