Ojas Gramopadhye
Computer Science & Engineering
Indian Institute of Technology, Bombay

190050075
B.Tech.
Gender: Male
DOB: 17-06-2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	null

Scholastic Achievements

- Secured **99.84** percentile in **JEE Mains** out of over **1.1 million** candidates *(2019)*
- Achieved **98.3** percentile in **JEE-Advanced** out of more than **0.2 million** candidates *(2019)*
- Scored **410** out of **450** marks in **BITSAT** examination conducted by *BITS, Pilani* *(2019)*

Internship and Key Projects

Locust Occurrence Modelling and Prediction *Summer 2021*
Data Science Associate | Data Science Intern *Dtime*

- Worked on an **end-to-end** machine learning project to model and forecast **locust outbreaks** in East-African region.
- Implemented machine learning algorithms to **extract and engineer new features** and capture the **spatial and temporal** characteristics of the problem, and tackle the heavily skewed nature of the problem, *(as high as 1:5k)*.
- Implemented **Bi-directional ConvLSTM** based **U-Net** model for pixel level classification on **67k grid-IDs** of 10 km^2 each, projected over **spatial images** corresponding to **450+ timestamps**, with respective segmentation masks.
- Used a combination of algorithms like **SMOTEENN** and **SMOTETomek**, with **Balanced Ensemble** Classifiers to reduce the effect of class asymmetry and predict a locust occurrence, **minimizing false negatives** successfully.

Spoof-Resistant Face Recognition *Summer 2020*
Institute Technical Summer Project *WnCC, IIT Bombay*

- Built an **convolutional neural network** and trained it on a **self-made** live and fake images dataset.
- Extracted **128-D facial encoding vectors** from **dlib's 5-point facial landmark model** to train a support vector machine and work with the **liveness detection model** to identify the face.
- Implemented **OpenCV's Caffe** based face detector to detect a single face in the image.

Lossless High-Entropy Compression Algorithm *Summer 2020*
Seasons of Code *WnCC, IIT Bombay*

- Successfully implemented a **seq2seq recurrent neural network** model using *Long Short Term Memory* **(LSTM)** units to achieve **high entropy data compression**, for storage in reduced spaces.
- Achieved the task to convert numeric sequences of a fixed length to compressed versions minimizing the complexity of their **fourier-transform**, and created a functionality to generate a mapping and recreate the original signal from it.

Red Plag : Plagiarism Checker *Autumn 2020*
Prof. Amitabha Sanyal — (Course project) *IIT Bombay*

- Developed a **plagiarism checker** to measure pairwise similarity between a collection of text files.
- Adopted an algorithm that involved using **separate tokenizers** for languages **C++, Java, Python** followed by **winnowing of vectors** from **hashed k-grams** to compute similarity percentage.
- Created a web **front-end** using **Angular** framework to visualize results in a graphical manner, and **Django** based web-framework for the **backend** server to maintain the database, and to link and store query results.
- Added **authentication** using *JSON web-tokens* **(JWT)**, to restrict access to authorised individuals only.

Comparison of TCP variants *Spring 2021*
Prof. Vinay Ribeiro — (Course Project) *IIT Bombay*

- Simulated a client and server network using **Socket in C**, to transfer files using different variants of **TCP**.
- Recorded network traffic using **Wireshark** and analysed **window scaling graphs** for **TCP Cubic** and **Reno**.

IITB Proc: Multi-Cycle Processor *Spring 2021*
Prof. Virendra Singh — (Course Project) *IIT Bombay*

- Designed a **16-bit** computer system with 8 general purpose registers, capable of executing instructions like **Jump, BEQ**, and **multiple Load** and **Store** and add-subtract arithmetic operations using a **16 bit Kogge Stone Adder**.

Technical Skills

Software skills : C++, Python, Bash, Java, JavaScript, HTML, SQL, MATLAB, Git, LaTeX
Data Science : Pytorch, Tensorflow, Keras, Numpy, OpenCV, Pandas, Matplotlib, Sklearn, Imblearn

Extracurricular

- Attended **InterIIT Camp** for **Aquatics** and currently a member of **Aquatics Team IITB**
- Competed in **All India IPSC** Swimming Championship (U-19) and won **2nd prize** in an event. *(2016)*
- Took part in **62nd National School** Swimming Championship (U-19) organised by **SGFI**. *(2016)*

Scholastic achievements and extracurricular activities are not verified by the Placement Cell