Koustav Sen
Computer Science & Engineering
Indian Institute of Technology Bombay

190050062
UG Second Year
Male
DOB: 19-Aug-2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	9.10
Intermediate/+2	CBSE	Hemsheela Model School	2019	97.20
Matriculation	ICSE	St. Joseph's Convent Higher Secondary School	2017	97.60

Scholastic Achievements

- Secured **All India Rank 42** in JEE Advanced among 2,00,000 candidates [2019]
- Achieved **All India Rank 29** in JEE Main among 1.2 million candidates [2019]
- Recipient of prestigious **KVPY Fellowship** by Dept. of Science and Technology, Govt. of India securing **All India Rank 75** in SA stream [2017]
- Recipient of National Talent Search Examination **NTSE** scholarship by NCERT, Government of India [2017]
- Awarded certificate of merit for outstanding academic performance and for being among the top **0.1 percent** of successful candidates in **Physics** for AISSCE [2019]
- Awarded certificate of merit for being placed in **National Top 1%** in **National Science Examinaton** in **Physics** and **Chemistry** [2019]

Projects Undertaken

Red Plag
Autumn 2020

Guide: Prof. Amitabha Sanyal | Course Project — *IIT Bombay*

- Developed a **cloud** based rudimentary **copy checker** for computer programs using **Django** for backend and **HTML** for frontend where authenticated users to have access to the service
- Implemented the **Longest Common Subsequence** algorithm for document fingerprinting and calculating the covariance matrix for the set of files
- Implemented user services like **upload**, **download**, **login** and **logout** using django token authentication and represented the data graphically using surface plots on **Matplotlib**

Machine Learning GYM
Summer 2020

Season of Code — *Web and Coding Club, IIT Bombay*

- Implemented **Logistic Regression** and **n-layer Neural Network** model from scratch using **Numpy** for general binary classification problem
- Extended the algorithms to **multi-class** classification using **Softmax Regression**

Image Compression and Noise Reduction
Autumn 2020

Guide: Prof. Amitabha Sanyal | Course Project — *IIT Bombay*

- Replaced all color vectors in an Image with their **K Cluster Centroids** using **KMeans Algorithm** of **Scipy** Library
- Reconstructed Image from given (possibly overlapping) patches while minimising the **salt and pepper noise**

Deep-Learning in Image Recognition
Summer 2020

Self Project

- Implemented a **Deep Neural Network** for **Image Classification** using **Tensorflow**
- Implemented a **Convolutional Neural Network** model for image classification and compared the results with a deep neural network
- Implemented a **Residual Neural Network** model for sign recognition using **Keras** and **Tensorflow** to improve over a CNN model
- Explored and implemented **YOLO** algorithm for autonomous driving and developed a model for **Object Detection** using weights from previously trained model

Levitt's Metric *Autumn 2020*
Guide: Prof. Amitabha Sanyal | Course Project *IIT Bombay*

- Implemented **Levitt's Metric** to represent Covid-19 India cumulative deaths data using **Matplotlib**, **Pandas** and **Numpy** for data analysis and pre-processing
- Implemented **Linear Regression** model of **SciPy** library to fit the data and using the obtained line to predict the time required for the pandemic to end

Position of Responsibility

Teaching Assistant *Spring 2020*
Physical Chemistry CH107 *IIT Bombay*

- Among the **30 students** selected across all batches for teaching a class of **40 first-year students**
- Mentored the academically struggling students by conducting **Help Sessions** and catered to students' course-related issues
- Coordinated with the Professor to conduct **Tutorial Sessions** and **evaluate exam papers**

Technical Skills

Languages	C++, Python, LaTeX, Java
Web Development	HTML, CSS, JavaScript, Bootstrap
Machine Learning	Numpy, Pandas, Tensorflow, Keras, Matplotlib, SciPy
Softwares	MATLAB, AutoCAD, SolidWorks, Android Studio

Courses Undertaken

Computer Science	Data Structures and Algorithms + Lab, Software Systems Lab, Discrete Structures, Data Interpretation and Analysis, Logic for Computer Science**, Digital Logic Design + Lab**, Design and Analysis of Algorithms**, Computer Networks + Lab**, Abstractions and Paradigms in Programming Language, Computer Programming and Utilization
Mathematics	Calculus, Linear Algebra
Online Courses	Deep Learning Specialization (By deeplearning.ai), Convolutional Neural Networks in TensorFlow (By deeplearning.ai), Sequence Models (By deeplearning.ai)
Miscellaneous	Introduction to Electrical and Electronic Circuits, Organic and Inorganic Chemistry, Physical Chemistry, Engineering Drawing, Biology

***to be completed by April 2021*

Extra Curricular

- Committed to **Green Campus** initiative under **National Service Scheme**, IIT Bombay by planting trees inside the Institute, collecting and reusing plastic waste to make flower pots and made a presentation on **Hot Composting** method of organic farming [2019-20]
- Successfully designed a **remote controlled bot** in **XLR8** competition conducted by Electronics and Robotics Club, IIT Bombay [2019]
- Attended **Vijyoshi Camp**, organized by Indian Institute of Science (IISc), Bangalore for facilitating interaction and discussion among bright young minds and leading researchers [2019]