



**Ravuri Dilip Kumar**  
**Mechanical Engineering**  
**Indian Institute of Technology, Bombay**

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**B.Tech.**  
**Gender: Male**  
**DOB: 09-03-2000**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	

## Scholastic Achievements

- Pursuing a Minor Degree in Systems and Control Engineering department, IIT Bombay
- Secured All India Rank **634** in IIT JEE-Advanced out of **0.22 million** candidates in 2017

## Professional Experience

### Kenfront | Data Analyst

[Jun '20 - Aug '20]

- **Preprocessed** the corpus of text into tokens, performed **feature extraction** and used various machine learning algorithms to build a **classification** system to **predict the sentiment of textual data**
- Tokenized the text into words, eliminated **stop words** and **normalized** by **stemming** and **lemmatizing**
- Developed bag of words model by employing **term frequency-inverse document frequency** for feature extraction and applying **KNN, SVC, multinomial naive Bayes** algorithms and achieved **85%** accuracy
- Generated **word embeddings** of preprocessed data and applied **CNN, LSTM** to improve accuracy to **90%**
- Upgraded the model to classify into **13 emotions** with **69%** accuracy instead of just positive and negative
- Implemented the model in an application using **twitter API** to classify the tweets according to the sentiment

### Query by Humming | IIT Kanpur

[May '19 - Jul '19]

*Guide: Prof. Vipul Arora, Department of Electrical Engg., IIT Kanpur*

- Implemented a QBH system deploying **Locality Sensitive Hashing, Note-Based Recursive Alignment, Dynamic Time Wrapping**, and **Wasserstein Distance** to produce a ranked-list of recommended songs
- Employed the **Source-Filter** model with **Non-Negative Matrix Factorization** technique (**SF-NMF**) followed by a **CNN-RNN** network for Melody Extraction from Polyphonic Music by salience enhancement
- Implemented a **hybrid HMM-CNN** where a **3-state HMM** models note events and a **CNN** is trained to model **posterior probabilities** of the HMM hidden states for effective transcription of humming queries
- Designed a **DNN** approach for music file representation in a **Deep Musical Semantic Embedding Space** inspired from **Levenshtein space deep embedding (LSDE)** model used for Query-by-string word-spotting

## Key Projects and Certifications

### Java training | Swabhav Techlabs

[Jun '20 - Jul '20]

*Awarded the Letter of Excellence for the exceptional performance during the one-month Java training*

- Developed a **menu-driven console-based** application to create a connection with **MySQL** server and update the contacts database using **JDBC**; used **PreparedStatement** class object to prevent **SQL Injection**
- Incorporated the **SOLID** principles to make the code more understandable, flexible and maintainable

### Detecting COVID-19 with Chest X-Ray using PyTorch | Coursera

[Jun '20]

*Guide: Amit Yadav, Senior Machine Learning Engineer at Picquora*

- Created an **image classification** model using **ResNet-18** neural network that can classify chest X-Ray scans into **three categories** - **normal, Viral Pneumonia or COVID-19**
- Achieved **96.6%** accuracy on **COVID19 Radiography** dataset containing nearly **3000 chest X-ray** scans

### Using Efficient Sorting Algorithms in Java to Arrange Tax Data | Coursera

[Jun '20]

- Created an application to sort **Missouri Tax Data** in **ascending order** using five sorting algorithms
- Analysed **bubble sort, insertion sort, merge sort, selection sort, and quicksort** algorithms and observed the difference between various efficient sorting algorithms in **memory and time usage**

## Position of Responsibility

### Design Convener | Undergraduate Academic Council

[18 - '19]

- Part of 3 members group responsible for **publicizing the events** of **UGAC**, catering to **3200+** students
- Ideated and revamped the **logo** for **courserank**, IIT Bombay, an online platform for reviewing courses
- Designed posters for events of **the six bodies** of Undergraduate Academic Council, IIT Bombay

## Extracurricular Activities

- Can code in programming languages like **Python, R, C++, Java, MATLAB, SQL, LaTeX**
- Completed a **three-year-long** training as an **NCC** cadet and received **C-certificate** [17 - '20]
- Worked as an organiser in food and beverages department of **Techfest**, the technical festival of IITB [17]
- Volunteered in the world's largest **cleanup campaign** at Versova beach launched by Afroz Shah [17]