Sneha Kulkarni

Mechanical Engineering

Indian Institute of Technology Bombay

200100090

B.Tech.

Gender: Female

DOB: 9/20/2002

Examination	University	Institute	Year
Graduation	IIT Bombay	IIT Bombay	2024

Pursuing Minor in **Artificial Intelligence and Data Science, C-MInDS,** IIT Bombay

SCHOLASTIC ACHIEVEMENTS

- Secured **99.92 percentile** in IIT JEE Mains among **1.1 million** applicants with **City Rank 1** in Pune amongst girls   *('20)*
- Awarded the Kishore Vaigyanik Protsahan Yojana Fellowship (**KVPY**) by the Indian Institute of Science, Bengaluru   *('20)*
- Attained the **INSPIRE** Scholarship (**top 0.1%** in the state) in the HSC Board Examination with **City Rank 1** among girls   *('20)*

INTERNSHIPS

IBM Research Lab	• Worked as a Summer Research Intern in the field of **Green Artificial Intelligence Technology** • Focused on reducing the computational costs arising in CNNs as well as Transformer Models in NLP • Reduced the trainable parameters by **50%** while maintaining accuracy, thus improving efficiency • Used the **Fisher Information** of the model parameters to create a fixed sparse mask using **PyTorch** • Analyzed reduced storage and communication costs in **Transfer Learning** and **Federated Learning**
Gabriel India Ltd. – ANAND Group	• Researched and understood the company's **manufacturing processes** and **business processes** • Compared the company's performance with peers and its own trend based on financial parameters • Completed a project based on improving the **Measure of Performance** in a given Assembly Line • Analyzed and fixed the issue of **8%** rejections at the last stage of the manufacturing chain

POSITIONS OF RESPONSIBILITY

Data Analytics and Visualization Team |UGAC, IIT Bombay| Core Team Member   *(July '22 - Present)*

*Selected from **140+** candidates spanning all years and programs via rigorous assignment and interview*

- Part of a diverse 12-member team working to provide data-driven solutions to the institute and external organizations
- Collaborated with **Prof. Sunita Sarawagi** from the Computer Science Dept., IITB for interpreting national data on energy and health using public datasets, responsible for reaching out to startups and established companies for industry projects

Mentor – Vocals | Advanced Learning Programme | Symphony Club, IIT Bombay   *(Sept '21 - April '22)*

*Responsible for mentoring selective **15** students for advanced level singing techniques and other aspects of performing music*

- Carried out the primary task of creation of content for weekly sessions of teaching **Hindustani Classical and Light music**
- Coached for improvisation in music, key aspects of performing as well as setting and assessment of weekly assignments

PROJECTS UNDERTAKEN

Real-Time Facial Emotion Recognition using CNNs | Institute Technical Project, IIT Bombay   *(Apr '21 - July '21)*

- Built a Convolutional Neural Network model to recognize human facial emotion from a real-time webcam capture
- Achieved a classification accuracy of **71 %**; used the model to build an **emotion-based music recommendation system**
- Used TensorFlow (for building, training and testing the model) and SoptiPy (for the music integration part)

Autonomous Driving – Car Detection and Driver Behavior Analysis | Analytics Club, IIT Bombay   *(Dec '21 - Feb '22)*

- Implemented Real-Time Object Detection using the powerful 'You Only Look Once' (**YOLO**) algorithm in **Tensorflow**
- Used **Non-max suppression** and Intersection over Union (**IOU**) for handling overlapping boundary boxes
- Achieved Mean Average Precision Score of **58 %** by fine-tuning pre-trained CNN Model on Vehicles-OpenImages Dataset
- Applied different EDA techniques to study driving patterns for different drivers and assigned a score to each driver

EXTRA-CURRICULARS

Singing	• Received **12 years** of training in Hindustani Classical Music from renowned musician Dr. Arawind Thatte • Completed **9 exams (Alankaar)** in Sugam Sangeet and **6 exams (Vishaarad)** in Hindustani Classical music • Qualified for the Marathi singing Reality **TV** show **Sur Nava Dhyas Nava** on **Colors Marathi** channel • Selected for the show **Asha ki Asha** – an online talent hunt show organized by singer **Asha Bhosle** • Performed in the **59th Convocation IITB**, institute event Surbahaar and **200 +** music concerts
Social	• Member of **India Network for Basic Income** as a contributing music artist in Education awareness films • Organized and performed in cultural programmes conducted in orphanages and old-age homes
Drawing	• Secured **A grade** in *Intermediate Drawing Grade Examination* conducted by The State Art Committee • Participated in several district and state-level portrait and landscape painting competitions
Others	• Reached semifinals in Institute-wide Sports League in **Lawn Tennis** conducted by Aavhan, IIT Bombay • Completed a course on Financial and Managerial Accounting under **Shailesh J. Mehta SOM**