



Ashutosh Tyagi  
Chemical Engineering  
Indian Institute of Technology Bombay

210020025  
B.Tech.  
Gender: Male

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2025	8.57

Pursuing a Minor Degree from Department of Centre for Machine Intelligence and Data Science, IIT Bombay

### SCHOLASTIC ACHIEVEMENTS

- Awarded **AP (A+) grade** in **CS 101** course bestowed to 3 out of 668 students for exemplary performance in the course
- Achieved **99.62 Percentile** in **JEE mains** examination and secured rank in top **0.40 Percentile** in **JEE Advanced** examination
- Shortlisted for 5 days **SSB Interview** for officer rank conducted by **Service Selection Board, Ministry of Defence (2019)**

### PROFESSIONAL EXPERIENCE

**Data Analyst | Intern | DeNA, Tokyo - Japan** (May'24-Jul'24)

- Developed a **bot-detection algorithm** that effectively capture **existing & newly** created bot accounts on Pococha app
- Banned **15,000+** bots from Pococha Live app with **50L+ downloads in India**, enhancing revenue potential for the platform
- Leveraged **network science tools** to decode user behavior, revealing latent connections & insights from app usage patterns

**Machine Learning Engineer | Intern | AiProff** (Jan'24-Mar'24)

Received a **Letter of Recommendation** from the **CEO** of the company for **exemplary work performance & out-of-the-box thinking**

- Developed a **computer vision-based** Machine Learning model to prevent animal intrusion in the agricultural fields
- Improved model accuracy through successful implementation of **data collection & data augmentation** techniques

**Optimizing Maharashtra State Road Transport Corporation (MSRTC) Operations | Research Intern** (May'23-Dec'23)

Guide: Prof. Milind Sohoni, Department of Computer Science & Engineering, IIT Bombay

- Contributing to the development of a sustainable **transportation system** to serve larger population in **Maharashtra**
- Conducted a **field visit** & engaged with **depot manager** to closely observe operations & identify the challenges of MSRTC

**Automated Attendance marking system | Research Intern | Computer Vision** (Nov'22-Dec'22)

Guide: Prof. Pawan Goyal, Department of Computer Science & Engineering, IIT Kharagpur

- Collaborated with a PhD student to develop a face recognition model by incorporating insights from multiple research papers
- Recipient of a commendatory **letter of recommendation** from the professor for underscoring exemplary work performance

### KEY PROJECTS

**Plant Disease Identification | Deep Learning | Research Project** (Feb'23)

- Developed an **innovative app** utilizing a neural network to accurately detect potato plant disease using **leaf image**
- Designed & integrated frontend webpage with **FastAPI** backend framework, enable user-friendly interaction with the model
- Successfully **deployed** the model on the **Google Cloud Platform (GCP)** that enables seamless accessibility to the user

**License Plate Recognition | Computer Vision | Research Project** (Dec'23)

- Developed an ANPR model using computer vision, integrating **Vision Transformers** for superior accuracy & performance
- Improved ANPR accuracy via **advanced image processing & object detection** across various colors & plate sizes

**Image Caption Generator | Computer Vision | NLP | Self Project** (Nov'23)

- Leveraged the **VGG16** model to fine-tune ICG, achieving high accuracy in generating contextually relevant captions
- Implemented a **CNN-RNN** architecture, combining CNN for feature extraction & **LSTM** for generating image captions

**Audio Instrument Separation | Deep Learning | Course Project - CS419** (Apr'23)

- Employed diverse range of **Spectrogram & Masking** techniques for high-quality isolation of **Drums, Bass, Vocals** sounds
- Trained a DL model on the **MUSDB** dataset comprising of **150 audio mixtures** to achieve high-quality audio stem isolation

**Movie Recommendation Web Application | Natural Language Processing | Self Project** (Apr'23)

- Combined **data analysis & web technologies** to create an interactive & personalized movie recommendation system
- Utilized regular expressions and cosine similarity on past audience reviews, resulting in accurate movie suggestions

**Universal Unsupervised Anomaly Detection in Medical Imaging | Machine Learning | Course Project - DH602** (Apr'24)

- Developed a modified **Reverse Autoencoder** with **attention mechanisms** for unsupervised anomaly detection in brain MRIs
- Integrated a **discriminator network & enhanced loss function** with **adversarial learning** for more accurate classification
- Evaluated the model using large-scale medical imaging datasets (FastMRI+, IXI, Brats, Kaggle) for performance validation

### TECHNICAL SKILLS

**Programming & Scripting Languages:** C, C++, Javascript, Python, Solidity, HTML, CSS

**Tools & Libraries:** FastAPI, Flask, MATLAB, L<sup>A</sup>T<sub>E</sub>X, Django, NumPy, TensorFlow, GitHub, SQL, BigQuery, Argus

**Kali Linux Tools:** BurpSuite, WireShark, Aircrack-ng, John, HashCat, Social Engineering Toolkit, BetterCAP, ARPSpoof, Hydra

### EXTRA - CURRICULARS & POSITIONS OF RESPONSIBILITIES

- Selected for the **Inter IIT Sports Meet'22**, Athletics Camp at IIT Bombay, showcasing exceptional athletic abilities & dedication
- Acquired **ethical hacking** skills & demonstrated expertise in leveraging **Kali Linux** tools for cybersecurity applications
- Participated in & prepared models for Wifi Controlled Racing Bot & Radio Control Plane competitions held at IIT Bombay
- Served as a Coordinator for **Media and Public Relations** at **Abhyuday** (Social Body of IIT Bombay) for its 8<sup>th</sup> edition