



Ashutosh Bharti
Civil Engineering
Indian Institute of Technology Bombay

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B.Tech.
Gender: Male
DOB: 25/06/2003

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2025	6.83

SCHOLASTIC ACHIEVEMENTS

- Secured an impressive **98.33** percentile among **1 million** candidates in the Joint Entrance Exam - Main [2021]
- Ranked in the top **4.2%** of candidates who appeared in JEE Advanced among **0.15 million** aspirants [2021]

INTERNSHIPS

AI Research Intern | Prof. Sean Minns | University of Southern California [Jul'24-Aug'24]

- Developed automatic **facial affect recognition**, integrating advanced models like **EMO-AffectNet** and **LibreFace**
- Contributed to **audio-visual** compound affect recognition system, enhancing **multimodal analysis** capabilities
- Utilized **OpenCV** and **Gradio** libraries for rapid prototyping and user engagement through interactive demos
- Coordinated with leading researchers from MIT, USC, and South Korea's ETRI to enhance project capabilities

Research Associate Intern | Nebulixus | IT Consulting [Jun'24]

- Analyzed India's renewable energy sector, forecasting growth from **195,010 MW** in **2024** to **541,898 MW** by **2028**
- Compiled **state-wise** renewable energy potential, identifying key growth areas for **solar** and **wind** power development
- Quantified renewable energy integration, tracking growth from **22.60%** in 2022-23 to **31-32%** projected by 2027-28

KEY PROJECTS

Satellite Image Classification | Course Project | Prof. Buddhiraju K Mohan [Jan'24-Apr'24]

- Developed a robust neural network ensemble using **ConVNet**, **VGGNet**, and **ResNet** with **bagging** techniques
- Engineered **ensemble method** combining classifier predictions with **customizable weight**, achieving **93%** accuracy
- Created an interactive **Gradio GUI** and hosted the model on Hugging Face Spaces for prediction visualization

Named Entity Recognition System | Course Project | Prof. Pushpak Bhattacharya [Jan'24-Apr'24]

- Designed and implemented a comprehensive **NER** system for recognizing named entities in **Hindi** language text
- Fine-tuned** a BERT-based model (**Hindi-BERT-v2**) for NER using Hugging Face **Transformers** for enhanced accuracy
- Implemented a robust evaluation framework with **confusion matrix**, achieved **95.76%** accuracy and **97.28%** precision

Artistic Mastery Using Neural Style Transfer | Course Project | Prof. Biplab Banerjee [Jan'23-Apr'23]

- Developed a **style transfer model** using a pre-trained **VGG19** network, extracting features from **5** convolutional layers
- Engineered custom loss functions, including **content** and **style loss**, using **Gram matrix** calculations across **5** layers
- Conducted **feature vector** visualization to pinpoint optimal features for accurate **content** and **style** representation

Anime Face Synthesis with DCGAN and VAE | Winter in Data Science | IIT Bombay [Dec'23-Jan'24]

- Engineered **generator-discriminator** model, lowering fake image scores to **0.08** and peak real image scores to **0.98**
- Developed a **VAE** with **1024-dimensional** latent space, resulting significant improvements in image quality and fidelity
- Utilized **perceptual loss** from VGG19 to enhance image reconstruction, achieving a **PSNR** of **26** and **SSIM** of **0.87**

Deep Kernel Deblur | Self Project [Nov '23]

- Developed **encoder-decoder** architecture-based image deblurring system, successfully achieving a **PSNR** score of **24.43**
- Processed and augmented **1000+** high-resolution images using **3** distinct Gaussian kernel sizes for robust model training
- Leveraged **mixed precision** training with PyTorch's **GradScaler**, resulting in over **30%** reduction in training time

TECHNICAL SKILL

- Languages** : C/C++ | Python | SQL | L^AT_EX | MATLAB | Golang | HTML
- Libraries**: NumPy | PyTorch | Pandas | Matplotlib | TensorFlow | Scikit-learn | OpenCV | Transformers

EXTRA-CURRICULAR

Technical	<ul style="list-style-type: none">Designed a functional 3D model of Robotic arm and integrated a moving mechanism [’23]Competed in RC Plane making competition in a 4 member team under Aeromodelling Club [’22]
Social	<ul style="list-style-type: none">Contributed towards the Powai Lake Cleanup Campaign along with 300+ volunteers [’22]Provided personal mentoring to underprivileged JEE students, focusing on their academic growth [’22]
Sports	<ul style="list-style-type: none">Completed year long training of Cricket with National Sport Organisation, IIT Bombay [’22]Successfully completed 5 Km Crossy GC, representing Hostel-3 at institute-wide competition [’23]