





AMRUTA PARULEKAR

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EDUCATION

Indian Institute of Technology Bombay

Mumbai, India

B.Tech in Electrical Engineering; M.Tech in Artificial Intelligence; Minor in Computer science

(Grade: **9.13/10.0**)

(Sep '20 – Jun '25 (Expected))

- **Two undergraduate research awards**
- **AP grades (top 1 percent)** in Image Processing, Biology, and Public Health Informatics courses
- **Best Project Award:** Electronic Design Lab; **Best Presentation award:** Automatic Speech Recognition

PUBLICATIONS AND CONFERENCES

1. **Combining Datasets with Different Label Sets for Improved Nucleus Segmentation and Classification** (Paper), published and presented at [Bioimaging \(BIOSTEC\) 2024](#), Rome - **Best Student Paper Award nominee**
2. **Transforming Breast Cancer Diagnosis: Ultrasound to Mammogram** (Paper), submitted to [Ultrasonics](#)
3. **A Computer Vision Pipeline for Laryngoscopic Image Standardization** (Poster), presented at [COSM 2024](#)
4. **Artificial Intelligence-based Eosinophil Count in Gastrointestinal Tract Biopsy** (Poster), [Gastroenterology](#)

INTERNSHIPS

3D Visualization with NeRF and motion tracking for Vocal Fold Surgery Assistance

May'23 - Jul'23

Research Internship (MITACS scholarship) | Guide: [Prof. Lueder Kahrs](#)

University of Toronto

Automated Machine Learning Platform and Object Detection for Factory Worker PPEs

May '22 - Jul '22

Data Science Internship | JIO Data Science Platform

Reliance JIO

Accident prediction in Nuclear Power Plants using Reactor Transients and ML models

Nov '23 - Jan '24

Research Internship | Guide: [Prof. Gopika Vinod](#)

Bhabha Atomic Research Centre

KEY PROJECTS

Speech Generation Models for Automatic Dubbing of Agriculture Education Videos

Aug'24 - Ongoing

Dual Degree Project (nationwide project [BharatGPT](#)) | Guides: [Prof. Preethi Jyothi](#), [Prof. Ganesh Ramakrishnan](#)

IIT Bombay

Novel Loss Function for Nuclei Instance Segmentation & Classification in Histopathology Images

Aug '22 - Nov '23

Bachelor's Thesis-I (With [TATA Cancer Research Hospital](#)) | Guide: [Prof. Amit Sethi](#)

IIT Bombay

Multilingual & Low Computation Automatic Speech Recognition for Low Resource Languages

Jan '24 - Ongoing

Research Assistant (nationwide project [BHASHINI](#)) | Guides: [Prof. Preethi Jyothi](#), [Prof. Pushpak Bhattacharya](#)

IIT Bombay

CT reconstruction from Ultrasound Images of Breast Cancer using GANs & Domain Adaptation

Aug '22 - Aug '23

Research Assistant (With [TATA Cancer Research Hospital](#)) | Guide: [Prof. Amit Sethi](#)

IIT Bombay

Genomics-based Survival Analysis for Lung Cancer using Multimodal Data & Gene Selection

Jan '24 - Aug '24

Bachelor's Thesis-II (With [TATA Cancer Research Hospital](#)) | Guide: [Prof. Amit Sethi](#)

IIT Bombay

Defence for Diffusion-based Face-morphing Adversarial Attacks on Facial Recognition Systems

Jan '23 - Apr '23

Course project | CS726 : Advanced Machine Learning | Guide : [Prof. Sunita Sarawagi](#)

IIT Bombay

Toxicity Removal in Large Language Models using LSTM-RNN & Transformer models

Jan '24 - Apr '24

Course project | CS772 : Deep Learning for Natural Language Processing | Guide : [Prof. Pushpak Bhattacharya](#)

IIT Bombay

Multi-armed Bandits & Markov Decision Processes for Optimized Gaming

Aug '23 - Nov '23

Course project | CS747 : Reinforcement Learning | Guide : [Prof. Shivaram Kalyanakrishnan](#)

IIT Bombay

TECHNICAL SKILLS

Languages: Python, C, C++, Java, Latex, MATLAB, HTML, CSS, Javascript, Cypher, Assembly Language, VHDL, XML, R, SQL

Python Libraries: Numpy, Pandas, Matplotlib, PyTorch, NLTK, SK-Learn, OpenCV, Tensorflow, Transformers, Fastai, Scipy

Software: Git, AGAT1, Jupyter, Docker, Stride, Quartus, GNU Radio, Spice, FastAPI, Neo4j, Keil, Flip, Putty, Fusion360, Sage

POSITIONS OF RESPONSIBILITY

Department Academic Mentor | Best Mentor Award

Aug '23 - Ongoing

Selected based on a rigorous process of interviews, SOP, and peer reviews to mentor 12 junior undergraduates

IIT Bombay

Teaching Assistantships | IIT Bombay

Facilitating smooth course organization, grading papers, mentoring students, conducting tutorials and help sessions

- CS753 - Automatic Speech Recognition; ME119 - Engineering Graphics and Drawing; BB101 - Biology

ACHIEVEMENTS AND EXTRA-CURRICULARS

- Secured the **National Talent Scholarship (NTSE)**, exclusively granted to the **top 0.2%** students of the nation 2018
- **Volunteer** for Anant Vikas project; Youth council NGO (cancer); SAATH NGO (Thalassaemia) 2017
- **Women in Science and Engineering (WISE):** Introducing technology to rural school girls 2023