



Omkar Shirpure
Computer Science & Engineering
Indian Institute of Technology Bombay

22B0910
B.Tech.
Gender: Male
DOB: 30/01/2004

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2026	7.81

Pursuing a Minor in the Entrepreneurship at Desai Sethi School of Entrepreneurship, IIT Bombay

SCHOLASTIC ACHIEVEMENTS

- Recipient of the *Kishore Vaigyanik Protsahan Yojana Exam (KVPY)* fellowship in **SX** division (2021)
- Recipient of the *National Talent Search Examination (NTSE)* Scholarship awarded by the **NCERT** (2020)
- Scored a percentile of **98.93** in **JEE Main** examination among **10,00,000+** aspirants all across India (2022)
- Scored a percentile of **96.87** in **JEE Advanced** examination among **1,50,000+** aspirants all across India (2022)
- Achieved **Silver Medal** in **Dr. H. Bhabha Balvaidnyanik Exam**, surpassing **80,000+** aspirants statewide (2019)

KEY PROJECTS AND EXPERIENCE

InstiApp : Buy and Sell | App Development Project - Developers' Community (Mar '23 - May '23)

- Worked on **InstiApp** - with over **10,000+** downloads and **2,500+** MAUs meeting the info-social needs of campus
- Created a user-friendly front-end interface allowing users to put their goods online on **Buy and Sell Portal** on InstiApp, **currently functioning feature** facilitating the campus residents in buying and selling their goods online

Mess Digitalization | App Development Project - Developers' Community (May '23 - Present)

- Maintaining a platform of digitalized mess management in **10+** hostels serving **10,000+** people on the daily basis
- Developed a **Flutter-based remote configuration** system for Mess-i Tablets which facilitates **remote debugging** of issue, also implemented an **'Extras'** feature to current dashboard streamlining access to additional meal options

Natural Language Processing Model | Learners' Space - Web and Coding Club (Summer '23)

- Applied **Skip-Gram model**, word-embedding in NLP using PyTorch and developed NN for **Sentiment Analysis**
- Implemented **optimisers** in **sequential NN** model for **Binary Classification** tasks leading in better test results
- Fine-tuned a pre-trained model to perform as a **Movie QnA** model which involved training on **bespoke self-curated data-set** specifically for movie domain and created an app in **Gradio** for easy and simplified interaction

Image Processing & Object Detection | Summer of Code - Web and Coding Club (Summer '23)

- **Metal Porosity Calculator** - Developed a sophisticated model using **OpenCV** to analyse highly magnified metal surface images utilizing methods as **thresholding** and **contour-placements**, with huge real-world **applicability**
- Developed a **live**, highly **configurable** settings system enabling parameter adjustments for more accurate results
- **Money Counter** - Developed **contour-based** object detection model utilising **Canny** edge-detection & data-filters

Computer Architecture Projects | Course Project : CS-232 - DLDC Lab (Autumn '23)

Instructor: Prof. Biswabandan Panda (IIT Bombay)

- **Binary Music Encoder** - Engineered a **VHDL** based **sequential encoder** to precisely identify and convert binary value of notes into **synchronized byte output**, representing the chords their respective collection of notes
- **MIPS Programming** - Incorporated different algorithms in MIPS for a **query handling** program that sorts the inputs utilising **Heap Sort** algorithm and searches efficiently through **Binary Search** algorithm in the sorted data

Data Analysis Projects | Course Project : CS 215 - Data Analysis and Interpretation (Spring '23)

Instructor: Prof. Ajit V. Rajwade (IIT Bombay)

- **MRI Scans Analysis** - Analysed MRI scan images to calculate the **correlation co-efficient**, Quadratic Mutual Information (**QMI**) to measure dependence and repeated the same for negatives to compare the quantitative results

POSITIONS OF RESPONSIBILITIES

Core Member | Institute Developers' Community, IIT Bombay (Jan '23 - Present)

Part of **25+** member team, responsible for design, development and maintenance of projects for institute

- Developed new features like **Buy and Sell Portal** currently **active** and proved to be immensely successful with over **120+** product posts for sale since it's launch, ***General Championship Leader board** to the InstiApp
- Incorporated **remote configuration** feature in existing Mess-i application that facilitating remote **debugging**

TECHNICAL SKILLS

Languages	C/C++, Python, Bash, x86 and MIPS Assembly, VHDL, DART, Git
Data Science Libs	PyTorch, TensorFlow, NumPy, Pandas, Matplotlib, SciPy, spaCy
Development	Flutter, Angular, Django, TypeScript, CSS, Bootstrap, HTML, Javascript