



Desai Utsav Manojkumar
Mechanical Engineering
IIT Bombay

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B.Tech
Gender: Male
DOB: 24-10-2002

Examination	University	Institute	Year	CPI/%
Graduation	IIT Bombay	IIT Bombay	2024	8.33

Auxiliary Degree: Pursuing a **Minor** degree in Computer Science and Engineering, IIT Bombay

CONTACT INFORMATION

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SCHOLASTIC ACHIEVEMENTS

- Achieved **99.46** percentile in JEE Mains 2020 examination amongst **1 million +** candidates across the nation [2020]
- Secured **All India Rank 3419** amongst **0.15 million+** candidates in JEE Advanced 2020 examination [2020]
- Obtained a total of **347** marks out of 450 in BITSAT examination conducted by BITS Pilani [2020]
- Secured District **Rank 1** in IAPT examination organized by Physical Research Laboratory(Ahmedabad) [2019]

KEY PROJECTS

Gesture Controlled Drone | ITSP PROJECT | ITC, IIT BOMBAY

[Jul'22-Aug'22]

- Designed and trained a **neural network** model for recognizing **ten** hand gestures utilizing **MediaPipe & Tensorflow** libraries
- Mapped controls of **DJI Tello drone** using python code utilizing libraries such as **djitellopy, openCV, numpy, pandas, etc.**
- Implementing a **Face Detection** model combined with a **PID control** system to direct the drone to track the person's face

Facial Expression Recognition with Pytorch | ONLINE PROJECT | COURSERA

[Dec'22]

- Implemented an **efficient-net** neural network with an accuracy of **70%** to build a **Facial Expression Recognition** model
- Testing the model on real life dataset and usage of **Image Augmentation** techniques to increase the training dataset

Image Segmentation with Pytorch | ONLINE PROJECT | COURSERA

[Dec'22]

- Created a Image Segmentation model by using the **UNet** model and **'timm-efficientnet-b0'** encoder and imagenet weights
- Utilize **albumentation** library of python for Image Augmentation on the Human Segmentation and Arial images Dataset

CFD Modeling of Additive Manufacturing | COURSE PROJECT | PROF. RAMESH SINGH, ME

[Mar'22]

- **Spearheaded** a team of **5** to study particle flow in a nozzle used in **Additive Manufacturing** by varying angle of inclination
- Developed an improved model of a partitioned nozzle in **Solidworks** with 18 partitions to maximize the flow symmetry
- Maximised the powder catchment efficiency for a given inclination angle by analysing the particle flow in **Ansys Fluent**

Remote Controlled Plane | FLAGSHIP PROJECT | AEROMODELLING CLUB

[Oct'21]

- **Designed** and built the **fuselage**, stabilizers and wings to give it an **aerodynamic shape** of a miniature aircraft
- **Optimized** the performance and stability of flight by careful consideration of design parameters and reduce the drag

Deep Face Recognition Model | GUIDE: P BALASUBRAMANIAN | ANALYTICS CLUB, IITB

[Dec'21-Present]

- Surveyed literature on state-of-the-art face recognition deep learning models like **Facenet, Deepface** and **Arcface**.
- Implemented the **FaceNet** paper in python and tensorflow using the **LFW** dataset containing 5K+ people and 13.4K+ images

POSITIONS OF RESPONSIBILITY

Junior Engineer | SOFTWARE SUBSYSTEM | TEAM RAKSHAK | IIT BOMBAY

[May'22 - Present]

*Develop a fleet of robust **Unmanned Aerial Vehicles (UAVs)** to support Search and Rescue Operations in the event of a disaster*

- Tasked with developing a Fast RCNN model to recognise alphanumeric, shape and colors from the image captured by drone
- Researched about different approaches and architectures like **YOLO, ResNet** for alphanumeric Recognition and Shape Recognition and compared their effectiveness on the basis of computational time required and accuracy of the model

Marketing Co-ordinator | TECHFEST | IIT BOMBAY

[May'21 - Apr'22]

Asia's largest science and technology fest | 5 million+ online reach | 2500+ National Colleges

- Assisted in a social initiative **'NIDAAN'** to spread **Breast Cancer awareness** and onboarded **10+** NGOs, and **100+** universities
- Articulated an extensive database of **20+** Companies and deliberated with them to increase the overall budget by **100%**

PROFESSIONAL EXPERIENCE

IAI Project Pipeline Simulation | GODREJ AEROSPACE

[Nov'21 - Dec'21]

Plant 4-B, Methods and Planning, Aerospace Division, Godrej and Boyce

- Worked on a simulation software for tube bending on CNC machine for aircraft engines for Israel Aerospace Industries(IAI)
- Identified and Rectified the errors faced in the CNC tube bending simulations on the software provided by SOCO machinery

COURSES AND CERTIFICATIONS

Neural Networks and Deep Learning | ONLINE COURSE | COURSERA

[May'22 - July'22]

- Completed a 4 week long online course consisting of sessions by industry experts, projects and challenges with real-world data covering the fundamentals of **Deep Learning and Neural Networks**, **Digital Image Processing** and basics of the **CNN**
- Trained a convolutional neural network architecture with accuracy of **92%** to recognize alphanumeric digit from drone image

Computer Vision and Image Processing | ONLINE COURSE | COURSERA

[May'22-Jun'22]

- Enrolled in a 6 week long online course on Computer Vision covering various topics including, image transformations, histogram and intensity transformations, spatial filtering and classification models including Convolutional Neural Networks

Python for Data Science and Machine Learning Bootcamp | ONLINE COURSE | UDEMY

[Dec'21-Jan'22]

- Acquiring knowledge of various libraries like numpy, pandas, matplotlib, SciKit Learn, seaborn, etc. useful in Data Science
- Learned various ML libraries including Linear Regression, Logistic Regression, KNN, Decision trees, Random Forests etc.

COURSES UNDERTAKEN

CS	Computer Networks(M), Introduction to Machine Learning(M), Data Structures and Algorithms(M)*, Image Processing, Logic for Computer Science(M), Computer Vision*, Computer Programming and Utilization
MATHEMATICS	Linear Algebra, Differential Equations, Introduction to Numerical Analysis, Multi variable and vector calculus, statistical Machine Learning and Data Mining
MECHANICAL	Solid Mechanics, Thermodynamics, Fluid Mechanics, Manufacturing Processes, Engineering Graphics and Drawing, Applied Thermodynamics*
OTHERS	Introduction to Electrical and Electronics Circuits, Economics, Philosophy, Quantum Mechanics

**to be completed by May'23*

TECHNICAL SKILLS

- **Programming Languages and Softwares:** C, C++, Python, HTML, CSS, JAVA, SQL, MATLAB
- **Libraries and Frameworks:** Numpy, Pandas, scikit-learn, Matplotlib, OpenCV, TensorFlow, PyTorch
- **Machine Training Session *Tinkerer's Laboratory*:** Explored to use various machines

EXTRA-CURRICULARS

Sports	<ul style="list-style-type: none">• Secured Rank 1 in District Level Skating Tournament and participated in the State Level Tournament for Three consecutive years• District Champion in Skating for February 2016, October 2016, September 2017• Member of District team in State Level Rollball Tournament during 2014• Participated in the State Level Rope Tournament during 2012
Social	<ul style="list-style-type: none">• Took part in 10 days trekking program at Mount Abu organised by YHAI in 2010
Miscellaneous	<ul style="list-style-type: none">• Midway prize winner in SARCASM event organized by SARC, IIT Bombay