



**Vaibhav Takale**  
**Aerospace Engineering**  
**Indian Institute of Technology, Bombay**

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**B.Tech.**  
**Gender: Male**  
**DOB: 14-02-2000**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	

#### SCHOLASTIC ACHIEVEMENTS

- Secured **99.07** percentile in **JEE Main 2017** and **97.53** percentile in **JEE Advanced 2017** [17]
- Achieved rank **16** and **27** in the State Level Merit List in **Maharashtra Talent Search** in 8th and 10th [13, 15]

#### KEY PROJECTS

- Object Classification using CNN (Self Project)** [Jun '20]
  - Trained a multi-class classification model on **CIFAR10** dataset using **Tensorflow** to classify images
  - Gained **90%** accuracy by applying **Transfer Learning**, **Image Augmentation** and **Hyperparameter Tuning**
- Text Classification with NLP (Self Project)** [Jun '20]
  - Trained a spam classifier to find spam text messages, using concepts of Natural Language Processing (NLP)
  - Achieved **98.4%** accuracy by implementing Support Vector Machine (SVM) algorithm
- Data Compression and Visualization (Self Project)** [Jun '20]
  - Implemented **k-means** algorithm to map a higher dimensional data to a lower dimensional space
  - Obtained **0.742** V-score by applying Principal Component Analysis (PCA) to k-means **Elbow method**
- Big Data Analysis of IMDB Dataset (Course Project)** [May '18]
 

Guide: Prof. Prabhu Ramachandran (Department of Aerospace Engineering)

  - Used **Pandas**, **Matplotlib** and **SciPy** library of python to interpret the correlation between the time of release, the genre of movie and revenue generated by the movie in various countries
  - Analyzed the correlation between IMDB ratings and success of the movie using **Jupyter Notebook**
- Computer Programming and Utilization (Course Project)** [Apr '18]
 

Guide: Prof. Krishna S (Department of Computer Science and Engineering)

  - Developed and executed an algorithm in **C++** to simulate **2-player interactive game** 'Chain Reaction'
  - Simulated explosion of orbs on reaching critical mass and elimination of the opponent's orbs

#### RESEARCH PROJECTS

- Numerical Study of Flame Behavior in a Micro-combustor** [Dec '19]
 

Guide: Prof. Sudarshan Kumar (Department of Aerospace Engineering)

  - Developed a **numerical model for combustion** in a micro-combustor using simulation software **Ansys Fluent**
  - Studied dependency of **flame stability** on geometry of micro-combustor with different inlet velocities
  - Inferred effects of combustor material on **heat loss** through the combustor wall for different materials
- Computational Fluid Dynamics** [Jun '19]
 

Guide: Prof. Kowsik Bodi (Department of Aerospace Engineering)

  - Simulated flow in a **shock tube** using **OpenFOAM** toolbox to compare density and pressure based solvers
  - Studied the effects on **quasi 1D flow** inside the nozzle by varying back pressure and boundary conditions

#### TECHNICAL SKILLS

**Programming Languages** : C, C++, Python, SQL, Tableau, Shell Scripting

**Simulation Softwares** : Ansys Fluent, Matlab, Simulink, OpenFoam, Ansys Gambit, Solidworks, Autocad

#### POSITIONS OF RESPONSIBILITY

- Mentor, British Council Program | English Language Course** [Jul '18 - Apr '19]
  - Mentored **50 freshmen** to improve their verbal and nonverbal interpersonal communication skills
  - Conducted monthly meetings to keep track of their **language learning progress** and program-related issues
- Web Nominee | Aerospace Engineering Association Council** [Mar '18 - Apr '19]
  - Co-created a website as well as organized non-technical events like "Department Freshmen Orientation"
  - Promoted Aerospace culture in the institute as a part of the 13-member council
- Captain | Hostel 4 Athletics Team** [Mar '20]
  - Headed athletics team of hostel 4 as a captain, obtaining **Bronze** medal in Athletics General Championship
  - Awarded the **Hostel Sports Color** (given to only **2 out of 500**) for exceptional performance in various sports

#### EXTRA - CURRICULAR

- Sports**
  - Part of the 36 member **Athletics InterIIT Winter Camp**, selection camp for interIIT Athletics team [Dec '18]
  - Bagged **Gold** medals in **4\*400** and **4\*100** relay event in Athletics General Championship [Oct '18, Mar '20]
  - Awarded by **Hostel Sports Special Mention** for exceptional performance in various sports [Aug '19]
- Public Speaking | Student Wellness Center**
  - Addressed **800+** students on overcoming language problems in the event **Life@IITB** [Oct '19]