Vyankatesh Sawalapurkar | **170100034**
Mechanical Engineering | **B.Tech.**
Indian Institute of Technology, Bombay | **Gender: Male**
DOB: 21-09-1999

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	null
Intermediate	Maharashtra HSC Board	Shri. Dawale Jr College, Akola	2017	90.92%
Matriculation	Central Board of Secondary Education	Jawahar Navodaya Vidyalaya ,Amaravati	2015	10

Scholastic Achievements

- Awarded **Technical Freshman of the Year 2017-18** for exemplary technical performance *[2017-18]*
- Secured **All India Rank 723** in JEE Advanced 2017 among 1.6 lakh candidates *[2017]*
- Achieved **99.7 percentile** in JEE Mains 2017 among 12 lakh candidates *[2017]*
- Awarded **INSPIRE award** for being in the **top 1 percent** of HSC Board Examination, Maharashtra *[2017]*
- Pursuing minor degree in **Computer Science and Engineering** *[2018-present]*

Internships

Google Summer of Code - 2020 *[May'20-Aug'20]*
Open Data Kit - Software Developer

- Improved **ODK-X Notify** project that supports sending short messages from a **Desktop Application** out to all phones running the ODK-X apps without using any third-party software
- Integrated Notify project with ODK-X Tool Suite by migrating database from Firebase to Sync-Endpoint Server
- Created **Unit** and **Instrumentation tests** using **Junit framework** for Desktop and Android applications
- Documented instructions for installing and using ODK-X Notify applications using **reStructured Text**

Indian Infoline - IIFL *[May'19-Jul'19]*
Android Developement Intern

- Conceptualized, Designed and Developed an **Android Wear watch app** that displays the real-time stock prices of user-specific companies and has integrated **speech-to-text** searching assistant
- Established the connection between watch application and existing 5Paisa mobile application using the latest **Google APIs** to allow users to log in and logout to the watch app using a mobile app
- Implemented **Adaptive UI** for Square and Round wear watches to support different screen sizes and shapes
- Developed a proof-of-concept for a feature **App Inbox** using a mobile marketing platform **CleverTap**

ESTPL *[Apr'20-May'20]*
Software Developement Intern

- Developed a prototype of **E-Commerce Android application** customized for a Kirana store vendors
- Designed a web registration form for users with mobile number verification functionality using **Firebase**
- Developed a web interface to display real-time registered users data using JavaScript, HTML and CSS

Technical Projects

Autonomous underwater vehicle | AUV-IITB *[Sep'17 - present]*
AUV-IITB is an all-student team working on the design and development of an Autonomous Underwater Vehicle, Matsya, which competes annually at the International AUVSI RoboSub competition

Achievements: Semifinalist RoboSub 2019, San Diego | **National Winner** NIOT-SaVE, IIT Madras

- **Mechanical Subdivision Leader**
  - Represented the team and college at **International RoboSub Competition** 2019 in **San Diego, CA**
  - Planned **budget** and **work distribution** of the subdivision leading 10 junior design engineers
  - Headed the design of Autonomous Underwater Vehicle, **Matsya 6**
  - Executed **3-step recruitment** process to evaluate and select 5 students for the team from **200+** applicants
  - Worked on a technology transfer project under DST IMPRINT IIC on the design and development of **ROV**
- **Chief Mechanical Designer**
  - Ideated and Designed **Flexible End-Effector (Gripper)** capable of gripping objects of any shape
  - Optimized component positioning of the vehicle to balanced CG-CB and met stable equilibrium criteria
  - Developed in-house custom underwater connectors at **10%** cost of the industrial counterparts
  - Represented team AUV-IITB at National level competition **NIOT- SaVE** at IIT-Madras

Institute Technical Summer Project *[Jun'18]*

- Developed a computer program which can always beat a human at the game of stone-paper-scissor by predicting the opponents move using **Image Processing**
- Implemented Convexity Defect algorithm to perform **Gesture recognition** using **OpenCV-Python** library
- Extracted the image of hand from camera image using **motion detection** (by background subtraction)

Spacecraft Modelling and Animation *Course Project*
Prof. Parag Chaudhuri *Computer Graphics*

- Designed a spacecraft launch mission animation based on Chandrayan-2 using **OpenGL** library
- Modeled and rendered objects like Earth, moon, Launch site and Spacecraft using **Texture Mapping**
- Implemented an interface to create **Bezier space curves** by clicking control points in the scene

Hand Operated Water Lifting Device | NSS-IITB *[Aug'17 -Apr'18]*

- Cleared the selection test for **NIC (National Innovation Club)** department of NSS, IIT Bombay
- Designed the SolidWorks model of hand-operated water lifting device which presented at the **Festival of Innovation and Entrepreneurship, 2018** at the **Rashtrapati Bhavan**

Railway Ticket Counter Simulation *Course Project*
Prof. Jayendran Venkateswaran *Discrete Event System Simulation*

- Developed a **Discrete Event model** to analyze the behavior of passenger queues in a Railway ticket counter using **AnyLogic Software** and Java programming
- Simulated different **queuing systems** possible for a Railway Ticket counter and developed an optimal queueing system to maximize customer service level

Position of Responsibility

Web Secretary | Mechanical Department *[Aug'18-May'19]*
Responsible for the management of the website for the Mechanical Engineering Department of IIT Bombay

- Improved the design and architecture of the department website using Django framework, CSS, and HTML
- Co-ordinating with a council of 15 members, organized department events such as Orientation of First-year students(Mechanical Engineering), Department Convocation and Department Kurta day

Technical Skills

Programming	C/C++, Python, Java, Bash
Web Development	HTML, CSS, JavaScript
Software	Android Studio, OpenGL, Git, AnyLogic, SolidWorks, ANSYS(Static-Structural), AutoCad, LaTeX

Key Courses Undertaken

Computer Science	Computer Programming and Utilization, Data Structure and Algorithms, Operating Systems, Computer Graphics, Computer Networks*, Introduction to Machine Learning, Engineering Data Mining and Applications*, Introduction to Network Analysis
Mathematics	Calculus, Ordinary Differential Equations, Linear Algebra, Introduction to Numerical Analysis, Probability and Stochastic Processes*
Core Courses	Microprocessors and Automatic Control, Introduction to Electrical and Electronic Circuits, Discrete Event System Simulation, Operation Analysis*, Machine Design*, Thermodynamics, Fluid Mechanics, Solid Mechanics

* to be completed by November 2020

Extracurriculars

- Dedicated **80+ hours of social service** as a volunteer of the National Service Scheme by working on a Hand Operated Water Lifting Device to help needy people with the problem of waterlogging *[Aug'17 -Apr'18]*
- Represented Pune region of Navodaya Vidyalaya Samiti in **Chess national** for 3 consecutive years *[2012-14]*
- Participated in **Web-Development** and **Python Bootcamps** organized by the Career Cell division of Undergraduate Academic Council, IIT Bombay *[Jun'18]*
- Participated in the regional science congress held at JNV Canacona (Goa) as a **student representative** of JNV Amaravati *[Nov'13]*
- Mentored two teams of freshmen in the completion of their Remote-Controlled car for the XLR8 competition organized by Electronics and Robotics Club IIT Bombay *[Sep'18]*
- Attended **Android development** workshop conducted by Web and Coding Club, IIT Bombay *[Jan'18]*
- Presented technologies developed for AUV to **45+ student officers** from the Military Institute of Technology (MILIT – Armed Forces Training) *[Jan'20]*