Ankush
Engineering Physics
Indian Institute of Technology Bombay

170260036
UG Third Year (B.Tech.)
Male
DOB: 03/03/2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	7.88
Intermediate/+2	Central Board Secondary Education	Bhavan Vidhyalaya Panchkula	2017	88.60
Matriculation	Central Board Secondary Education	Army Public school , Chandimandir	2019	95.00

SCHOLASTIC ACHIEVEMENTS

- Achieved **All India Rank 912** in JEE Advanced (2017) out of **0.15 Million** students
- Acquired **All India Rank 1957** in JEE mains (2017) out of **1.2 Million** students
- Amongst State-wise **Top 1%** in National Standard Examination in Chemistry (NSEC) (2016), organized by IAPT and was among **300** who qualified for Indian National Chemistry Olympiad
- Pursuing a minor degree in **Electrical Engineering**
- Awarded Certificate of Merit by the CBSE for obtaining **A1 grade** in all subjects in class X

KEY-PROJECTS

Mars Rover Project Sep'18 - Present
Electronics Subdivision Head, leading a team of 8 *for engineering the electronics subsystems of the rover*

· Designed and implemented the electronics subsystems end-to-end, right from logic units consisting of **RPi, NUC** and hardware components like **Motor Drivers, DC-DC convertors & Bio-Sensors**
· Optimized the circuit design of the same to neatly fit in the area as specified by the mechanical design team; used **GX-160, USB connectors** to simplify the circuit interfaces of the **actuators** & motors
· Utilized **potentiometer feedback from actuators**, point cloud data from the on-board depth camera (**Realsense D435**) and Virtual **URDF arm model** to enable intuitive control of the robotic arm
· Currently working on robotic arm automation by leveraging IK algorithms & depth cam (stereo vision)

HEXAPOD Jun'18-Jul'18
Institute Technical Summer Project

· Built an **arduino** based six-legged moving robot (Hexapod) with **18 degrees of freedom**
· Established a **wireless communication** and syncing with **PS2 controller**
· Manufactured the bot by use of **Laser cutting and 3D-printing**

XLR8 Aug'17
Electronics and Robotics Club

· Constructed a Bot to overcome obstacles, ridden path and completed the task in the competition
· Implemented the electrical and mechanical parts of a Bot using **differential steering mechanism**
· Utilized **AT Tiny 2313** (Integrated Circuit) for the functioning of the Bot
· Incorporated a **Bluetooth module HC-05** and facilitated the use of an **L293D motor driver**

Remote Control Plane Nov'17
Aeromodelling Club, IIT Bombay

· Studied the mechanism and different structures of various types of air-planes and other necessary components and learnt the basics of flight, controls, stability and power of remote control plane
· Investigated for designs parameters for optimum performance and stability during flight
· Designed fuselage, stabilizers and wings to reduce drag and enhance the performance

MicroProcessor, IITB-Proc May'19

Course Project, Supervisor Prof. Virendra Singh, Department of Electrical Engineering

- In a Team of 4, Designed a 16-bit, Multi-cycle Microprocessor, IIT-Proc in **VHDL** which executes instructions like AND, NAND, Store, Load, BEQ and JUMP
- Designed the **datapath diagram and FSM** for the control unit of the microprocessor
- Designed all its components like ALU and Register file(consists of 8-registers)

POSITIONS OF RESPONSIBILITY

Department Alumni Secretary April'18-Mar'19

Engineering Physics Department, Student alumni relations cell(SARC)

- Organized and strengthened the **Department Alumni** database since **1965**
- Organized two **CORE TALKS** to enhance the core culture by Alumni of Physics department.
- Collected **35+** projects by contacting alumni from different **core industries** to float among the **120+** students as a part of **Industrial Learning Program**
- Assisted **SARC** in conducting **mock interviews** and successfully brought **60+ alumni** to prepare **350+** final year students for their placements
- Hosted Annual **Alumini day** with **700+** attendees and raised funds approx. **INR 368 Million**

Coordinator Media and Publicity (Techfest-IITB) Jul'18-Dec'18

Asia's largest college Technical festival, footfall of 1.75 lakhs+, 500+ universities

- Conceptualized, Executed and Managed various events like Science and Technical Competitions
- Coordinated with **100+ College Ambassadors** across India to conduct various competitions and workshops in their respective colleges
- Lead a team of **10+ organizers** to increase outreach of events conducted by Techfest

TECHNICAL STRENGTHS

Software	Eagle, Autocad, 3D view
Language	C++, python
Operating Systems	Windows, Ubuntu, Robot Operating System (ROS)

EXTRA-CURRICULAR ACTIVITIES

- Successfully completed one year training in Yoga under **National Sport Organization**
- Organizer of **Mood Indigo (2017), Horizon and workshops** (Cultural fest of IIT Bombay)
- Mentored a group of four students in XLR8'18 and then mentored couple of groups during ITSP'19

COURSES UNDERTAKEN

Physics	Group theory*, Photonics*, Quantum Mechanics I and II, General Theory of relativity and Special relativity, Waves, Optics and thermodynamics
Electrical	Microprocessors*, Sensors in Intrumentation*, Microwave Integrated Circuits*, Analog Circuits*, Electronic Devices and Circuits, Signals And Systems, Introduction to Electronics, Digital Systems
Others	Introduction to Computer programming and utilization, calculas, Linear Algebra, Differential Equations, Basics of Electricity and magnetism, Thermal Physics, Data Analysis and Interpretation, Classical Mechanics Complex Analysis, Introduction to Numerical Analysis, Physics lab

*to be completed by Nov 2019