Mohammed Abdul Imran Afreed		180070036
Electrical Engineering		**UG Third Year (B.Tech.)**
Indian Institute of Technology Bombay		**DOB: 04-05-1999**

Education	Institute	Location	Year	CPI/%
Graduation	IIT Bombay	Mumbai, Maharashtra	2022	-
Intermediate	Sri Chaitanya Junior College	Visakhapatnam, AP	2017	-
Matriculation	Sri Chaitanya High School	Visakhapatnam, AP	2015	-

SCHOLASTIC ACHIEVEMENTS

- Secured an All India Rank of **244** in JEE Advanced among over 0.2 million candidates (2018)
- Secured an All India Rank of **66** in JEE Mains (Engineering) among over 1.3 million candidates (2018)
- Achieved a State Rank of **66** in Andhra Pradesh State EAMCET among over 0.2 million candidates (2018)
- Placed in **National top 1%** in NSEC and selected to appear for INChO organised by HBCSE (2018)
- Recipient of the **KVPY Fellowship** by Department of Science and Technology, **Gov. of India** (2016)
- Secured an All India Rank **17A** in National Mathematics Talent Contest conducted by **AMTI** (2014)

PROJECTS & TECHNICAL ACTIVITIES

IIT Bombay Racing Team

A team of 70+ students from various backgrounds working on designing and manufacturing an electric race car annually to participate in formula student design competitions conducted by IMechE at Silverstone, UK and Formula Bharat.

Software and Electrical Design Engineer   **May '20 - Present**

Perception pipeline for driverless car, CAN & Data Acquisition

- **Developed** entire perception pipeline for a driver-less race car using **deep learning** for **Computer Vision**
- **Trained** a Convolution Neural Network with **60,000+ images** to detect cones and get their coordinates
- **Designed** and **trained** a Convolution Neural Network to estimate the 3-dimensional positions of cone based on the above mentioned coordinates and thus develop a 3-D map of surroundings using SLAM algorithm
- **Designed** Controller Area Network, which establishes communication between sensors and control unit
- **Designed** and **tested** the Data Acquisition and wireless communication systems for the electric race car
- **Mentored** four jr.design engineers in getting them ready to be able to design and test their respective subsystems

Electrical Junior Design Engineer   **Aug '19 - May '20**

CAN & Data Acquisition

- **Designed** a new CAN node by replacing the existing microcontroller to decrease cost and to improve customizability
- Involved in **testing** of Controller Area Network(CAN), Data Acquisition and wireless communication systems
- Involved in **selection** and **testing** of new wireless communication module to ensure error free communication

Electronics Design   **Indian Institute of Technology Bombay**

Prof. John, Electronics design lab   *Spring '21*

- **Designed** a printed circuit board to **estimate SOC** of lead acid batteries and display it on a LCD screen
- Read about SOC, SOH, cell balancing in a Battery management system and presented the understandings.
- **Designed** the circuit for the **noise cancellation headphones** performed simulations and presented the results

Autonomous Delivery robot   **Indian Institute of Technology Bombay**

Institute Technical Summer Project   *Nov - Dec '19*

- **Designed** and **manufactured** an **autonomous delivery robot** which can operate in any dynamic environment
- **Developed** a mobile application to instruct and get updates from the robot via Bluetooth communication
- **Designed** a **printed circuit board** which hosts all the circuitry, components of the robot
- **Presented** the work in Annual Tech and RnD Exhibition held Indian Institute of Technology, Bombay

IITB Power distribution System,   **Indian Institute of Technology Bombay**

Prof. Vikram Gadre, Network Theory Course Project,   *Autumn '19*

- **Studied** various kinds of power transmission systems, Graph theory and presented the work in a pedagogy workshop attended by students of various colleges under KITE initiative by MHRD, Govt. of India
- Visited the Electrical maintenance division and understood working of a substation, overall power distribution system of IIT Bombay spread across 550 acres with 14 substations as explained by Jr. engineer.

PROFESSIONAL EXPERIENCE

AI Developer   **Alorb Technologies**
Automatic vehicle entry and exit log   *Winter Internship, 2020*

- o **Developed** a software that can automatically logs license registration number of vehicles entering and exiting
- o **Trained** a Convolutional Neural Network to detect license plate of vehicle from the picture taken at security desk
- o Using **Image processing** and **Optical Charecter recognition** techniques, extracted the license number of vehicles

POSITIONS OF RESPONSIBILITY

Technical Counsellor   **Indian Institute of Technology,Bombay**
Technical head, Hostel - XVI   *Sep'18-May'19*

- o **Elected by 1000+ students** as Technical counseller to lead a team of three secretaries
- o Sucessfully **established** a new tech room for the hostel with all the essential equipment required
- o **Organised** various e-sports tournaments for **2000+ students** by getting the gaming equipment **sponsored**

Logistics and Operations Coordinator   **Mood Indigo, IITB**
Asia's largest College Cultural festival with footfall of 43,000+, 230+ events   *Jun'19-Dec'19*

- o Planned the mapping of a newly added venue to setup adventure rides, gaming stalls with all safety measures
- o Ensured smooth execution of all the events and informal activities in coordination with events coordinators
- o **Responsible** for ensuring the setup of stalls for all the Food and Beverage vendors and maintain hygiene
- o Involved in the ideation, planning of logistic, execution and security of all the pre-fest events of Mood Indigo

Operations Coordinator   **Entrepreneurship Cell, IITB**
Recognised as Asia's Entrepreneurship promoting student body, by NEN   *Sep '18 - Mar '19*

- o Allotted **accommodation for 500+ guests** and took on-spot registrations for various events during E-Summit
- o Involved in **databasing** and **dealing** with vendors for furniture, transportation services required for E-Summit
- o **Mentored** three teams of four students each in a **business idea competition** conducted for freshmen (**EnB Buzz**)

TECHNICAL SKILLS

- o **Programming:**   C++, MATLAB, Arduino, Python, VHDL
- o **Software:**   Eagle, AutoCAD, SolidWorks,Quartus, NgSpice
- o **Web development:**   HTML, CSS, Angular, java script, php, MySQL

EXTRA-CURRICULAR ACTIVITIES

- o Being a NCC Cadet, attended **Annual Training Camp(ATC)**, **Captains Training Camp(CTC)** and   *[Dec '18]*
  participated in activities like rifle firing, Obstacle Training, Weapon Training, Map reading, drill etc.
- o Participated in **Gaurd of Honor** while flag being hoisted on a hill top, on **Republic day**   *[Jan 2019]*
- o **Photographed** the entire album of Annual Training Camp(ATC) with a co-photographer   *[Dec '18]*
- o **Mentored** a team of four students in making a remote-controlled sanitising robot   *[Summer '20]*
- o Mentored a team in RC car making competition(XLR8) ranked 6th among 164 other teams   (Aug '19)
- o Volunteered in **Versova Beach cleaning campaign** as a part of Abhudaya,IIT Bombay   *[2018]*
- o **Volunteered** to counsel high school students regarding various career options available   *(2018)*
- o Visited **Hiware Bazar**, a model village known for irrigation system, water conservation   *[2018]*
  program to understand how local governments and NGOs work in a drought condition
- o **Mentored** a team of four students making a remote-controlled sanitising robot   (Summer '20)

KEY COURSES UNDERTAKEN

Electrical Engineering	Microprocessors, Digital Signal Processing, Communication systems, Probability and Random Processes, Electromagnetic waves, Electronic Devices, Network Theory, Digital Electronics, Analog Circuits, Signals and Systems, Electrical Machines and Power Electronics, Digital Systems
Mathematics	Calculus, Linear Algebra, Ordinary Differential Equations, Partial Differential Equations,Complex Analysis