**Rathour Param Jitendrakumar**          190070049

**Electrical Engineering**          **UG Second Year**

**Indian Institute of Technology Bombay**          **Male**

**DOB: 07/10/2001**

| Examination | University | Institute | Year | CPI / % |
|---|---|---|---|---|
| Graduation | IIT Bombay | IIT Bombay | 2021 | 9.24 |

Pursuing **Minor** in **Computer Science & Engineering**

## SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 926** in **JEE Advanced** among 161 thousand candidates *(2019)*
- Secured **All India Rank 1314** in **JEE Main** among 1.1 million candidates *(2019)*
- Recipient of the National Talent Search **(NTS)** Scholarship given by NCERT to 1000 students of country *(2017)*
- Awarded Academic Excellence Scholarship **(AES)** by SOF given to **one student per class per state** *(2017)*

## WORK EXPERIENCE

### Trainee | IIT Bombay Racing          *(Spring 2020)*
*A cross-functional team of students which designs, fabricates and assembles an Electric Race Car for Formula Student UK*
- Explored the **LV Safety** subsystem, the **Shutdown Sequence** of the car and its elements
- Investigated the **Electronic Control Unit** (ECU) subsystem, working with **RPM** and **position sensors** and realised the working of the steering, acceleration pedal and the brake sensors with **Arduino IDE**
- Acquired the knowledge of **Controller Area Network** (CAN) and **Data Acquisition** (DAQ) systems and their implementation, wrote code for wireless communication using **LPC1768 Mbed** microcontroller and XBee

## KEY PROJECTS AND BOOTCAMPS

### Distributed Deep Learning          *(Summer 2020)*
*Institute Technical Summer Project (ITSP)*          *(Institute Technical Council, IIT Bombay)*
- Developed a **Hierarchically Distributed Deep CNN** to parallelise workload across nodes in the system
- Utilised the model to implement better training on Super-High-Resolution Datasets via **spatial segmentation** of sample and observed increases in **training speed** and decrease in **memory utilisation** per node
- Compared the performance of **VGG16, ResNet**, and **DenseNet** when used as the underlying neural network

### Nonlinear Dynamics          *(Summer 2020)*
*Summer of Science (SoS)*          *(Maths and Physics Club, IIT Bombay)*
- Analysed Continuous and Discrete Dynamical Systems, **Stochastic Systems** and Chaos & Fractals
- Explored its application with **mathematical models** in Physics, Biology, Chemistry and Engineering
- Simulated mathematical models using **MATLAB** (dfield and pplane) and **Python** (SciPy, Pynamical) package

### Self Irrigation System          *(Summer 2020)*
*Tinkering Bootcamp, Learner's Space (LS)*          *(Tinkerers' Laboratory, IIT Bombay)*
- Developed a system using Arduino IDE, which toggles according to readings from DHT1 humidity sensor
- Manual **control** and **data monitoring** through **Blynk App** by projecting real-time data to Blynk servers

### Data Analytics Bootcamp          *(Summer 2020)*
*Learner's Space (LS)*          *(Analytics Club, IIT Bombay)*
- Utilised **Pandas** and **seaborn** for loading, cleaning, manipulating, analysing and visualising datasets
- Explored **Model Development** and **Model Evaluation** using numerous statistical techniques

## KEY COURSES UNDERTAKEN

| Electrical | **Analog Circuits**[*], **Digital Systems**[*], **Signal Processing**[*], **Power Engineering**, Probability and Random Processes[*], **Control Systems**[†], **Microprocessors**[†] |
|---|---|
| **Computer Science** | Computer Programming and Utilization, Logic for Computer Science[*] |
| **Coursera** | **Deep Learning Specialization** (deeplearning.ai), Algorithmic Toolbox[*] (UC San Diego) |

## TECHNICAL SKILLS          [*] *to be completed by November 2020*    [†] *to be completed by April 2021*

| Languages | C++, Python, Julia, HTML, CSS, LaTeX, SQL |
|---|---|
| **Frameworks & Libraries** | NumPy, SciPy, pandas, seaborn, scikit-learn, TensorFlow, Keras, PyTorch, OpenCV, PyTesseract, Selenium, Beautiful Soup, PyAutoGUI, Jekyll, Qiskit |
| **Softwares** | Git, MATLAB, Simulink, EAGLE, LTspice, AutoCAD, SOLIDWORKS, Illustrator |
| **Hardwares** | Arduino, ESP32, Raspberry Pi 4 |

## EXTRACURRICULARS

| Technical *(2019-2020)* | • Built a **RC Bot** capable of negotiating obstacles and designed, made a **RC Trainer Plane** <br> • Completed **Scientific Computing** and **Tinkering Bootcamp** organised by Learner's Space <br> • Completed **Quantum Computing** Workshop by Maths and Physics Club, IIT Bombay |
|---|---|
| **Social Volunteer** | • Volunteered for Career Counselling Campaign and A Session on Climate Change for 12,000+ underprivileged students from 8th to 12th conducted by **Abhyuday** in association with **NCC** |
| **Other** *(2019-2020)* | • Working as an **Editor** in the department newsletter team <br> • Studied **Beginner Music Theory** as a part of Summer School of Cult conducted by ICC <br> • Completed a year-long **training program** as **NCC Cadet** under 2 MER NCC at IIT Bombay |