



Rathour Param Jitendrakumar
Electrical Engineering
Indian Institute of Technology, Bombay

190070049
B.Tech.
Gender: Male
DOB: 07-10-2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	8.56

Pursuing **Minor in Computer Science & Engineering** and **Honours in Electrical Engineering**

Scholastic Achievements

- Secured **All India Rank 926** in Joint Entrance Examination (**JEE**) **Advanced** among 161 thousand candidates (2019)
- Secured **99.9%** percentile in Joint Entrance Examination (**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)

Key Projects

Scenario Approach to Robust Optimization

Summer Undergraduate Research Program (SURP)

(May 2021 - Present)

Guide: Prof. Debasish Chatterjee

(EnPoWER, IIT Bombay)

- Working on improving scenario approach to robust optimization problems in the **moderate to high dimensional** regime
- Studied **concentration of measure** phenomenon for the analysis of randomized algorithms and the scenario approach
- Analysed various randomized algorithms like **MCMC**, **Propp-Wilson**, **Simulated annealing** using Finite Markov Chains

Distributed Deep Learning

(Summer 2020)

Institute Technical Summer Project (ITSP)

(Institute Technical Council, IIT Bombay)

- Developed a **Hierarchically Distributed Deep CNN** in order to parallelise workload across nodes in the model
- Utilised the model to implement better training on **Super-High-Resolution Datasets** via **spatial segmentation** of each sample and observed increases in **training speed** and decrease in **memory utilisation** per node in the hierarchy network

Tinkering Bootcamp

(Summer 2020)

Learner's Space (LS)

(Tinkerers' Laboratory, IIT Bombay)

- Developed a **Self Irrigation System** using Arduino IDE, which toggles according to readings from a **DHT1** humidity sensor and provided manual **control** and **data monitoring** through **Blynk App** by projecting real-time data to Blynk servers
- Made **Human Detection System** using a Passive Infrared (**PIR**) sensor which uses a buzzer module for alarm sound

Tennis Scoreboard Simulator

(Autumn 2019)

Guide: Prof. V Raj Babu

(Course Project)

- Simulated a tennis scoreboard using **Embedded C** in the **best-of-three tiebreak** set format on the **Pt-51** board
- Displayed directions to use and the score, Game Point, Set Point, Match Point for each player using an **LCD Module**
- Used **UART** Module and **RealTerm** software for interfacing between a keyboard and **Atmel AT89C51** micro-controller

Positions of Responsibility

IIT Bombay Racing | Junior Design Engineer

(Sep 2020 - May 2021)

Faculty Advisor: Prof. Amber Shrivastava

- Simulated LV Safety board on **LTSpice** and verified the working of RTDS, Brake Light, Error Blocks of the subsystem
- Explored Electromagnetic Interference (**EMI**) Reductions Techniques to be incorporated into PCB designs

Teaching Assistant | Computer Programming and Utilization

(Spring 2021)

Guide: Bhaskaran Raman

(Computer Science and Engineering IIT Bombay)

- Academically guided 14 students, clearing their doubts through weekly sessions and personal interaction
- Created a **webpage** containing practice problems and relevant resources to enhance understanding of course

Technical Skills

Languages	C++, Python, Julia, HTML, CSS, \LaTeX , SQL, Embedded C, VHDL, MIPS, 8051, 8086 Assembly
Frameworks & Libraries	NumPy, SciPy, pandas, scikit-learn, OpenCV, TensorFlow, Keras, PyTorch, Jekyll, Qiskit
Softwares	Git, MATLAB, Simulink, EAGLE, LTSpice, Quartus, Keil μ Vision, AutoCAD, Adobe Illustrator

Extracurriculars

Technical

(2019-2020)

- Built a **RC Bot** capable of negotiating obstacles and designed & made a **RC Trainer Plane**
- Mentored** a student for Summer of Science in **Linear Algebra** and it's Applications
- Completed **Data Analytics**, **Scientific Computing** and **Quantum Computing** Bootcamps
- Completed Summer of Science in **Nonlinear Dynamics** and **Game Theory** by Math & Physics Club

Social Volunteering

(2019-2020)

- Volunteered for Career Counselling Campaign and A Session on Climate Change for 12,000+ students
- Mentored** students appearing for JEE during **COVID-19** crisis as part of **CovEd Education**

Miscellaneous

(2019-2020)

- Completed a year-long **training program** as **NCC Cadet** under 2 MER NCC at IIT Bombay
 - Worked as an **Editor** in the **Background Hum**, department newsletter team
 - Studied **Beginner Music Theory** as a part of Summer School of Cult conducted by ICC
- Scholastic achievements and extracurricular activities are not verified by the Placement Cell*