

Ritik Bilala

Mechanical Engineering (B.Tech. 2016-2020)
Indian Institute of Technology Bombay
CPI: 8.9/10

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- Completed a minor degree in **Electrical Engineering** Department with minor CPI **9.4/10**
- Awarded with **Panasonic Scholarship 2016** worth ₹ **42,500** (annually) given to **30** students out of all IITs
- Secured All India Rank **604** in **IIT-JEE Advanced 2016** amongst **0.2 million** candidates

INTERNSHIPS

ASSOCIATE SOFTWARE ENGINEER | ITS PLANNERS & ENGINEERS

Jul'20-Sept'20

Worked on **Public Transport, User Management & Maintenance Modules** for 2 months: Learned **PHP, JavaScript, MYSQL**

- Architect and developed front-End interface using Bootstrap & JQuery for **Solid Waste Management** smart city project
- Wrote PHP scripts to fetch data from **MYSQL** database in **JSON** format and used **AJAX** to display content on front-end
- Created pages for handling user session history, staff & assets management and service request tickets

SUPPLY CHAIN INNOVATIONS | HINDUSTAN COCA-COLA BEVERAGES, BANGALORE

May'19-Jul'19

Worked on **Supply Chain Innovations** for 2 months; Engineered **6 IoT solutions** saving more than ₹ **45 lacs per annum**

- Introduced **Internet of Things** on production line at Bangalore plant **bridging gaps** between machines & operators
- Investigated production line to identify breakdowns and abnormalities via in-depth **operator interviews** and **gemba walks**

Forklift Order Management	Streamlined palletization process by installing visual alarms on forklift to display available pallets to be picked from buffer to prevent frequent line stops ; Saved sum of ₹ 15 lacs yearly
Rejected Bottle Bin Full Alerts	Installed ultrasonic sensors to monitor the depth of rejected bottle bins and trigger SMS alerts for clearing bin before bottles overflow on line thus saved sum of ₹ 7.5 Lacs yearly
Electric Panel Health Monitoring	Configured e-mail notifications for high temperature in electrical panels to take action before actual breakdown; Saved total cost of ₹ 20 lacs annually by in-house development
Forklift Battery State Tracking	Created a solution to monitor utilization hours of forklift battery and display on online portal Accountability of consumed cycles & Increased in the lifespan; Yearly savings of ₹ 6.5 Lacs

RETURNABLE RACKS MANAGEMENT | FORD INDIA, SANAND ENGINE PLANT

Dec'18

- Worked with Material Planning & Logistics team on **improving inventory control** to ensure **individual rack wise tractability**
- Developed **2 inventory management applications** to access rack movement & maintenance history using a **mobile scanner**
- Automated the report generation** using Excel macros; Reduced manual efforts on Excel; Expedite the routine work by **30%**
- Studied VSM and flow charts and **created an inventory planner** to estimate number of racks available in any week of year

PRODUCT DEVELOPMENT | PORTABLE WIND TURBINE, VAYUJ

Mar'18

Guide: Prof. Asim Tewari | Department of Mechanical Engineering, IIT Bombay

- Designed an **experimental setup** to measure the counter-electromotive force of different DC motors at different RPMs
- Built a **mini 3-phase bridge rectifier** to rectify A.C output of **Brushless DC motor** used for power generation
- Maximized power output of turbine by **optimizing RPM** on basis of "**Efficiency vs RPM curves**" & "**Power vs RPM curves**"

POSITIONS OF RESPONSIBILITY

CO-FOUNDER & MANAGER | HAM RADIO CLUB, IIT BOMBAY

Apr'18-Mar'19

HAM Radio is **first-of-its-kind** club in institute devised to promote **Amateur Radio Hobby** in campus

- Conceptualized **10+ events** and **meticulously mentored 50+ participants** with a small but effective team of 3 conveners
- Prepared a **year-long budget** catering to events & inventory and handled ₹ **1 Lacs** as the operating cost of the club
- Initiated an **Online Learning Channel** to make HAM exam content available as a series of short videos
- Liaised with the **Wireless Planning Commission** to initiate process of conducting **Amateur Radio License Exam** in campus

KEY ACADEMIC PROJECTS

PARALLEL SUDOKU SOLVER | HIGH PERFORMANCE SCIENTIFIC COMPUTING

Mar'19

Guide: Prof. S. Gopalakrishnan | Department of Mechanical Engineering, IIT Bombay

(course project)

- Parallelized** backtracking algorithm to solve 16x16 Sudoku by **shared** and **distributed programming** using **Open MP** and **MPI**
- Drastically reduced runtime to solve nxn Sudoku by using **OpenMP & MPI hybrid programming** on multicore processors

COURSE WORK & SOFTWARE SKILLS

- GNR 652 | Machine Learning Course for Remote Sensing Applications (Institute elective)
- Probability and Random Processes (Minor course)
- Advance Your Skills in Deep Learning and Neural Networks (Linkedin Learning path)
- Advance Your Skills as a Python Data Expert (Linkedin Learning path)
- Data Visualisation for machine learning in python (Udemy)

Internet of Things	ESP32 Thingspeak Cloud Blynk Cloud Arduino C++ & Python
Software	MATLAB Excel-macros HTML5 CSS JavaScript PHP MYSQL
ML and AI Tools	Tensorflow Keras Tensor.js Python- Pandas Numpy, Webscrapping tools