



Gaurang D Jaju
Energy Science and Engineering
Indian Institute of Technology, Bombay

193170004
M.Tech.
Gender: Male
DOB: 05-12-1997

Examination	University	Institute	Year	CPI / %
Post Graduation	IIT Bombay	IIT Bombay	2021	null
Graduation	RTU, Kota	UCE	2018	73.34%
Graduation Specialization: Electrical Engineering				
Intermediate	CBSE	Samrat Public School, Ajmer	2014	80.80%
Matriculation	CBSE	Tagore International School, Kuchaman	2012	10

Scholastic Achievements

- Secured **99.47 percentile** in GATE-2019 among **1.12+ lakh** students in Electrical Engineering [Feb '19]
- Secured 7th rank among 90+ students in BTech, Electrical Engineering, UCE, RTU, Kota [Jun '18]

Projects and Seminars

- State estimation for Battery Management System (BMS) of Electric Vehicles** [Apr '20 - Present]
MTech Project | Guide: Prof. Venkatasailanathan Ramadesigan, Prof. Pavan Hari | IIT Bombay
 - Reviewed literature on equivalent circuit cell modelling and BMS for **Li-ion batteries**
 - Analysed validation of Kalman filter algorithms for **SOC estimation**
 - Studied different least squares method algorithms for **SOH estimation****Future Work :**
 - Study and compare the robustness of different SOC estimation algorithms
 - Develop suitable SOH estimation algorithm to predict battery degradation in EV battery packs
- Feasibility study of digital notice boards in IIT Bombay** [Aug '19 - Nov'19]
Course Project | Guide: Prof. Rangan Banarjee | IIT Bombay
 - Compared flex banners, posters, etc. and digital screens on basis of cost, energy and environmental impact
 - Performed **cradle-to-gate analysis** of digital media and print media for life-span of 10 years
 - Estimated **annual saving of Rs. 6 lakh** and about **12000 kWh of energy**, but increase in CO₂ emissions by 3 tonnes/year, by replacing printed media with 20 digital screens across the campus
- DC and AC grid integrated PV power system** [Sep '17 - May '18]
BTech Project | Guide: Prof. Mahendra Lahwani | UD, RTU Kota
 - Simulated different **MPPT control** mechanism with PV system
 - Integrated DC load system to AC grid connected PV power system in **MATLAB Simulink**
- Constant Power Loads in DC Microgrids** [Jul '19 - Nov '19]
Course Seminar | Instructor: Prof. Suryanaraya Doolla | IIT Bombay
 - Studied about DC microgrids, constant power loads and their stability issues
 - Analysed different **stability enhancement techniques** in DC microgrids with constant power loads
- Space based Solar Power** [Jan '18 - Apr '18]
BTech Seminar | Guide: Prof. Dinesh Birla | UD, RTU Kota
 - Reviewed literature on Space based solar power and current global efforts and designs
 - Studied and compared prominent **Wireless power transmission technologies** to be used
- Future energy scenario and Renewable Energy** [Aug '19 - Nov '19]
MTech Seminar | Guide: Prof. Chetan Singh Solanki | IIT Bombay
 - Performed literature review on future energy scenarios focusing on renewable energy transition
 - Compared 3 different future energy scenarios on basis of their environmental impacts

Positions of Responsibility

- **Company Coordinator | Institute Placement Team, IIT Bombay** [May '19 - Present]
 - Working in team of **40+** members to coordinate with the companies for recruitment of 1700+ students
 - Managing the recruitment procedures of **30+** companies as a single point of contact
 - Established connections with multiple companies across 8 sectors for campus recruitment
 - Collaborating with team in conducting pre-placement talks, tests for students of **23 disciplines and 7 degree programs**
- **Interview Coordinator | Institute Placement Team, IIT Bombay** [Dec '19]
 - Coordinated with a team of **250+** members for interviews of 1600+ students
 - Assisted in conducting Pre-placement Talks and Tests for 15+ firms
- **Teaching Assistant | EN205, Basic Electrical Lab, IIT Bombay** [Jul'19 - Nov '19]
 - Guided 30+ Dual Degree sophomores in conducting simulation of electric circuits
 - Coordinated in performing lab sessions and contributed in revision of lab manuals

Technical skills

Programming Languages : C++, MATLAB, Python
Softwares/Tools : MATLAB Simulink, System Advisor Model (SAM) - NREL

Key Courses and Learnings

Electric Drives * : Drive dynamics, DC motor drive, Induction motor drives, Switched reluctance motor drives

Renewable energy integration * : Grid security and stability, Reactive power support, Electric vehicles integration, Grid codes

Microgrids and Distributed Generation : Islanding detection techniques, Filter design, DSM Implementation, Virtual Inertia, Virtual Impedance

State Estimation * : Random variables and distributions, Kalman filtering, Stochastic Processes, Bayesian Estimation Ideas, Gaussian Sum Filters

Algorithms for Battery Management Systems + : Equivalent circuit cell modelling, SOC estimation, SOH estimation, Cell balancing, Power estimation

Power electronics : Switched power converters, State averaged modelling of converters, PWM and SVM techniques,

Machine Learning + : Linear and Logistic Regression, Neural Networks, Anomaly detection, Recommender Systems

* Ongoing + MOOC

Extra Curricular Activities

- **Finalist** in 'Energize' quiz organised by Energy club, IIT Bombay [Aug '19]
- Secured a position in the **top 4** in Chess tournament, 'Abhivyakti 2k18', RTU, Kota [Mar '18]
- Represented DESE in **chess and squash teams** in PGGC, IIT Bombay [Aug '19 - Jan '20]
- **Volunteered** with Vivekananda Study Centre, RTU, Kota to aid education of underprivileged children [2015-16]
- Guided 25+ students to assemble solar lamps as **trainer** from SoULS, IIT Bombay [2nd Oct '19]

Hobbies and Interests

Reading, Drawing caricatures, Listening music