Lalit Saini
Electrical Engineering
Indian Institute of Technology Bombay

180070030
UG Second Year
Male
DOB: 21-08-2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	9.55
Intermediate/+2	CBSE, Delhi	St. Wilfred's Sr. Sec. School, Jaipur	2018	92.20
Matriculation	CBSE, Delhi	St. Wilfred's Sr. Sec. School, Jaipur	2016	10.00

Pursuing Minor in **Computer Science and Engineering**

SCHOLASTIC ACHIEVEMENTS

- Currently ranked $\mathbf{7^{th}}$ among 150 students of Electrical Engineering Department [2019]
- Achieved an All India Rank **824** in JEE Advanced among 150,000 candidates [2018]
- Achieved an All India Rank **1826** in JEE Mains among 1 million candidates [2018]

PROJECTS

n-i-p-i-n Diode Analytical Model | *Winter Project* [December 2019]
Guide: Prof. Udayan Ganguly

- Conducted extensive literature survey on **n-i-p-i-n diode**, studied about physics involved in the diode and carefully analyzed current dependence of the diode
- Studied about applying **Monte-Carlo** simulation technique for analysis of device
- Studied about different existing **Impact Ionisation** models for semiconductor devices

Document Automation | *JLT India Challenge Techfest* 2019 [October 2019- December 2019]

- Developed a python program with GUI to read company database and generate pdf document from it and mail the response automatically to the mentioned email ids
- Developed a python program to develop formatted MS Word Document for each customer entry in a database, used **docx-mailmerge** and **reportlab** to complete the task
- Secured position in top **6** among all the entries from all over the country

Large Electrical Systems- Mobile Phone | *Course Project – Network Theory* [October 2019]
Guide: Prof. V.M. Gadre

- Studied and presented about electrical components and circuits embedded in a smart phone, emphasised about capacitive **touch screen** and **cellular network**
- Studied and presented the application of **Graph Theory** in electrical engineering
- Awarded to be the second best presentation by the Professor and TAs

MI official App | *Mood Indigo* [September 2019- December 2019]

- Developed official website of the **Mood Indigo**, Asia's largest college cultural fest with a footfall of over 143 thousand, using **Angular** for front-end development
- Developed official **Mood Indigo 2019** app in a team, having 18K+ downloads
- Implemented APIs using **Django** framework which were used to get and post user likes and get events list, worked in **Android Studio** to develop front-end of the app

BCD Multiplier | *Course Project – Introduction to Electronics* [March-April 2019]
Guide: Prof. M.B.Patil

- Implemented a circuit for multiplication of two given **4-bit Binary Numbers** by **Repetitive Addition Algorithm** investigated to do same by **Shift and Add Algorithm**
- Down counted a number till zero with **IC 74193** simultaneously performing addition of other number with itself using **IC 7483** meanwhile storing results in a chain of **ICs 7474**
- Implemented **Boolean logic** with combination of **ICs 7408** and **7432** to halt the circuit functioning at desired point input supplied input using a pair of thumbwheel switches
- Designed and Simulated the circuit using **CircuitLogix** and used **Eagle** for its drawing

Ticket Availability Checking Tool | *Hobby Project* [June 2019]

- Developed a program using **BeautifulSoup & Selenium** to check availability of tickets of a movie or an event in any city by scrapping website of BookMyShow
- Incorporated a fully functional notification feature in the tool providing constant reminders to the user regarding any upcoming event

ADDITIONAL LEARNING

Machine Learning | *Course undertaken on COURSERA* [May-July 2019]

- Conducted an extensive literature survey on Linear Regression, Logistic Regression, Regularization, Neural Networks, SVM, K-means Clustering Algorithm, Dimension Reduction and Anomaly Detection in the model used for the given data
- Successfully completed assignments in the course and gained insights into applying ML techniques on **Spam Classifiers** and **Optical Character Recognition** systems

POSITIONS OF RESPONSIBILITY

Department Web Secretary | *Electrical Engineering Students' Association* [Aug19-Present]

- Part of **9** member council representing **500+ undergraduates** of the EE department
- Tasked to handle the **official website of EESA**, work includes regularly updating website with recent department activities and events
- Ideated and helped in organising Department Freshers' Orientation and Department Teachers' Day celebration both of which saw a rise in foot-fall as compared to previous years
- Working on the implementation of **Git Webhooks** for automated server deployment kindled by a git push in the Github directory of the website for efficient handling

Convener | *Web and Coding Club, IITB* [April 2019-Present]

- Coordinating events of **one of the largest programming clubs in India** aimed at inspiring students to take up programming to instill a hobbyist programming culture in the institute

TECHNICAL SKILLS

Programming Languages	C++, Python
Softwares	MATLAB, GNU Octave, AutoCad, SolidWorks, Android Studio, LaTeX, Git, GNUplot, Xcircuit, Ngspice
Technical Libraries	Beautiful Soup, Selenium, Numpy, SciPy
Web Skills	HTML, CSS, Django, Angular, Jekyll

KEY COURSES UNDERTAKEN

Electrical Engineering	Semiconductor Devices, Analog Circuits and Lab*, Machines Lab*, Network Theory, Data Analysis and Interpretation, Electronic Devices lab, Digital Systems*
Mathematics	Calculus, Linear Algebra, Differential Equations, Complex Analysis
Computer Science	Logic in CS, Data Structures and Algorithms*
Other	Quantum Mechanics, Electricity and Magnetism, Biology, Chemistry, Economics, ML for remote sensing-I

**to be completed by May 2020*

EXTRA CURRICULAR ACTIVITIES

- Served in **National Service Scheme** as volunteer, making **audio travelogues** for the education of blind children, taught basics of English to mess worker [2018-2019]
- Successfully designed and completed a car bot to tackle challenges in a competition equipped with **Bluetooth** connectivity with mobile phone in my freshmen year [2018]
- Achieved state rank **5** in International Olympiad of **Mathematics** organised by Silver Zone foundation [2016]
- Secured 227^{th} rank out of 15817 teams in **PicoCTF 2019**, a cyber security based online competition organised by **Carnegie Mellon University** [2019]
- Stood 4^{th} in Jhatka GC, an electronic circuit designing based general championship [2019]