



**Laxman Kumar**  
**Electrical Engineering**  
**Indian Institute of Technology, Bombay**

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**B.Tech.**  
**Gender: Male**  
**DOB: 04-07-1997**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	5.46
Intermediate	RBSE	Shiv jyoti Convent Senior secondary school kota Raj	2016	72.00%
Matriculation	RBSE	Govt. Sr.sec. school new bulging Sirohi Raj	2013	68.83%

## SCHOLASTIC ACHIEVEMENT

- Scored **75 percentile** in Joint Entrance Examination Mains **among 1.2 million students** (2016)
- Scored **96.75 percentile** in Joint Entrance Examination Advanced **among 0.2 million students** (2016)

## PROFESSIONAL EXPERIENCE

**EISYSTEMS Services | TECHNEX IIT BHU | Data Analytics** (Jul 2020-Aug 2020)  
Guide | Mr. Mayur Dev Sewak

- Learned **Machine Learning** algorithms and techniques using **Python programming** language
- Acquired exhaustive skills to create ML models using libraries like **Numpy, Pandas** and **Matplotlib**
- Applied the algorithms and concepts **Heart Failure Prediction** project.
- Analyzed dataset of **500+** Heart patients and created ML model to predict chances of Heart Failure
- **Classified Patient's Risk level** through a machine learning model in order to avoid risks associated with it and **alert** patient well in advance on his cellphone via bluetooth.
- Achieved the highest prediction accuracy of **95%** using **Decision Tree algorithm**

**Image Encryption using Elliptic Curve Cryptography Spring'19 | Cryptography** (Mar 2020)  
TEQIP, Make In India | Prof. V.M. Gadre

- Implemented the **key generation** algorithm on the **Elliptic curve** of **256** points
- Implemented the Elliptic Curve Integrated Encryption Scheme (ECIES-256) on mapping the set of image pixels with the points on a chosen elliptic curve
- Analyzed the performance of this scheme by calculating the **loss of information** by comparison of **SNR**

## KEY PROJECTS

**RISC Microprocessor | Processor** (Nov 2019)  
Course Project | Prof. Virendra Singh

- Designed **Datapath** having **ALU, IR, Memory, Decoders** for **8 Register 16-bit** Microprocessor
- Designed Level 1 and 2 Flowcharts, FSM of Controlpath for Set of **14** instructions from given **ISA**.
- Implemented the design in Quartus using **VHDL**, simulated in **RTL** and tested the design on **FPGA**

**Digital Stopwatch | Electronics** (Nov 2018)  
Course Project | Prof. M.B. Patil

- Designed Analog Circuit of a **555 timer** in **Astable oscillator** mode to provide a clock signal to input of IC CD4033 to start its counting which can be display on **7 segment display**
- The circuit has been implemented on breadboard and soldered on general purpose **PCB**. This circuit can operate in **two modes** with play and pause switches
- Displayed the **real time** readings on **LCD** and delivered model achieved **93%** accuracy on digits on analog devices

**Zener Diode Characterization | Electronics** (May 2020)  
Course Project | Prof. Joseph John

- Build a **Fully connected Op-amp Circuit** with a voltage divider, Diff. amplifier, and **30 Analog components**
- Trained the implemented connection for **Shunt Regulator** and main application of this type of diodes are as Voltage Protector, as Voltage Reference and as Voltage Regulator
- Obtained the Estimate with **36 data points** and got **The breakdown potential of 6.30V**
- Studied the Input-Output Characteristics Voltage Regulator IC78XX and Analysed the Effect of Zener Diode on its performance

## Digital Image Water Marking | Image Processing

(May 2020)

Course Project | Prof. V.M. Gadre

- Implemented the method of **Discrete Wavelet Transform (DWT)** to embed fingerprint images on the **AADHAR** document images to get the watermarked authenticated document images
- Recovered the fingerprint image from watermarked image by using **inverse Discrete Wavelet Transform**
- Analyzed the performance by **mean-square error** b/w **recovered fingerprint image** and original image

## TECHNICAL SKILLS

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<b>Programming</b>	Python, C++, MATLAB
<b>Area of Interest</b>	Finance, Data Science, Image Processing, Deep Learning
<b>ML Frameworks</b>	PyTorch, Keras, TensorFlow, Numpy, OpenCV

## KEY COURSES UNDERTAKEN

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<b>Signal Processing:</b>	Digital Signal Processing, Digital Communication, RADAR systems
<b>Statistics:</b>	Data Analysis and Interpretation, Probability and Random Processes
<b>Processor Design:</b>	Digital Systems ,Microprocessors, Processor Design, Microprocessor Lab
<b>Udemy Online Courses:</b>	The Complete Digital Marketing, The Complete SQL Bootcamp

## POSITION OF RESPONSIBILITIES

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### Coordinator | Services| Mood Indigo

(Dec 2018)

- Part of the **Services Team** which provide all the **Infrastructure, Power** and other Requirements for the events
- Ensured the events happen without any hindrance as per the scheduled timeline during the fest period
- Hosted and successfully controlled a crowd of **400+ people** in Silent Disco Event

### Coordinator |Techfest

(Dec 2017)

- Volunteered in Nirbhaya, PAN India women self-defence initiative **impacting 2000+ women in 50+ colleges**
- Organised TechnoZion nationals, managed over **600 participants**, 3 challenges in bhopal zonals
- Volunteered in Guinness Record-breaking solar energy workshop SSAP, **impacting 5000+ school students**

### Coordinator |Abhyuday

(2017-2018)

- Visited many NGOs as a part of the **Awareness initiative** to spread awareness about the **Environment issue** .
- Working in a team of **50 students** for the execution of **20 events** based on various social issue
- Volunteered the **country's largest cleanup project** at Versova beach

## CO-CURRICULARS

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### Python for Finance: Investment Fundamentals and Data analytics : Udemy

(Jun 2020-Aug 2020)

- Performed Financial Analysis utilizing quantitative methods and python analytical tools to develop analytic models and solve **Portfolio Optimization** tasks

### The Complete Digital Marketing Course : Udemy

(Jul 2020-Aug 2020)

- Learned the concept of Digital Marketing through project-based approach (12 projects)
- Used Market research, Email and **Social Media Marketing, SEO optimization**, and **Google Analytics** to implement marketing strategies for online marketing channels

### The Complete SQL Bootcamp : Udemy

(Jul2020-Aug 2020)

- Performed **Data Analysis** and query to extract information and insights from **Database**.
- Learned the basic syntax of SQL e.g., aggregate function, common **SQL JOIN commands**

## EXTRA-CURRICULARS

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- Completed a year-long course under **National Sports Organization** in **Athletics** (Aug2017-Apr2018)
- Secured **3rd position** in IITB Crossy GC **5km long path** with Junior group (Oct 2019)
- Participated in the **Beat Plastic Pollution** campaign organised by **Abhyuday, IIT Bombay** on the occasion of World Environment Day (Jun 2018)