MANOJ KUMAR

3rd Year Undergraduate   **Email:** mkumar@iitk.ac.in
Department of **Electrical Engineering**, IIT Kanpur   **Phone:** +91-9896407925

Academic Qualifications

Year	Degree/Certificate	Institute	CPI/CGPA/%
2018-Present	B-Tech, Electrical Engineering	Indian Institute of Technology, Kanpur	8.8/10
2018	CBSE Sr. Secondary(12th)	Jawahar Navodaya Vidyalaya, Bangalore Urban	96.2%
2016	CBSE Secondary(10th)	Jawahar Navodaya Vidyalaya, Panchkula	10/10

Scholastic Achievements

- Secured All India Rank-2415 in JEE ADVANCE 2018 among 0.2 million Candidates.
- Secured All India Rank-4448 in JEE MAINS 2018 among 1.5 million Candidates.

Projects

Visible Light Communication (VLC) *Jan'20-Ongoing*
  (Project Mentor: Prof. Abhishek Gupta, Dept. of Electrical Engineering)
- Analysed different modulations schemes, encoding schemes etc. for VLC using **LABVIEW**. Studied the optimal placement of the VLC access points from the perspective of user-experience and throughput performance.
- Learned how to configure data packets and decode packets using **Universal Software Radio Peripheral (USRP)**.
- Generated different constellations plots of different **PSK** schemes like **BPSK**, **QPSK** in LABVIEW.
- Implemented a basic VLC link and successfully received messages via this link. Demonstration of the complete VLC link, which can transfer a video file successfully.

E Wall *(Electronics Club, IIT Kanpur)* *May'19-July'19*
- Developed an interactive board that can detect touch and multi touch gestures along with 6 other team members.
- Used a grid of copper tape, mutual capacitive sensing to get data, Arduino, mapped it and applied a simple machine learning model.

Gestures Controlled Robotic Car *(Prof. Mohit Law)* *(Course: Manufacturing Process II)* *Jan'20-Mar'20*
- Worked in a team of eight people and designed a CAD model of integrated **Gesture Controlled Robotic Car** from scratch
- Used industrial manufacturing techniques **Lathe, Milling, Drilling,3D printing** and electronics like **motors, Arduino, motor controller** in Mechanical Engineering Lab to shape the raw concept into a finished product.
- The car moves left and right, forward, and backward as per the gestures of the hands.

Relevant Courses

Fundamental of computing	Partial Differential Equations	Linear Algebra and ODE
Signals, System and Networks	Introduction to Electronics	Microelectronics
Complex Variables	Computational Methods	Control Systems Analysis
Probability and Statistics	Machine learning by Andrew Ng*	Neural Networks and Deep Learning*

*online courses

Technical Skills

- **Programming Languages and Tools:** C/C++, Python, MATLAB, Arduino, LABVIEW
- **Familiar:** Data Structures and Algorithms, Html, JavaScript, SQL, OOP Concepts
- **Numerical Computational Libraries:** NumPy, Pandas, Matplotlib

Positions of Responsibility

Manager, Raktarpan Wing *(Community Welfare Cell)* *April'20-present*
- In collaboration with BloodConnect (India's largest student run NGO working in field of eradicating the shortage of blood) conducted blood donation camps in IIT Kanpur and Kanpur City.
- Managed helpline calls and ensured an adequate supply of blood to the patients in IIT Kanpur. Built the database of donors and fulfilled the requirement of blood in the emergency cases by contacting the donors.
- Organized awareness sessions in IITK campus by collaborating with other clubs and organized awareness talks on blood.

Senior Executive Events, Athletics, Udghosh'19
- Successfully conducted all the athletics events at a given time schedule. Compiled all the result and positions.
- Conducted and supervised all the events of Athletics at **AAGAZ'19**, **Inferno'19.**

Senior Executive, Public Relations, Udghosh'19
- Assigned and managed the work done by Junior Executives and Facilitation of the Celebrities coming during Udghosh.
- Contacted and assisted artists and celebrities who visited the Annual Sports fest as distinguished guests such as Mr. **Mahendra Chavan** (Mr. World 2017 Gold), Mr. **Sardar Singh** (former India Hockey Captain) etc.

Extracurricular Activities

- Represented IIT Kanpur in 800m at **Udghosh'18** (Annual Inter College Sports festival IIT KANPUR).
- Represented IIT Kanpur in 800m, 1500m and 5000m at **Udghosh'19**.
- Secured third position in 1500m in **Inferno'19** (Annual Interhall Sports Competition IITK).
- Runner Up in Hockey among 28 teams in Intramural Tournament (organized by PE section IITK).
- Among the top 10 position holders in Women's Cell 5Km run.