Rohan Kumar

4th Year Undergraduate
Department of Physics and Aerospace

Email : rohankr21@iitk.ac.in
Phone : +91-6206159425

Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2021 - Present	B.Tech	Indian Institute of Technology, Kanpur	6.4/10
2021	CBSE(XII)	British English School, Gaya	96%
2019	CBSE(X)	British English School, Gaya	95.5%

Scholastic Achievements

- Secured rank 13277 among the 1.4 lakh shortlisted candidates in **JEE Advanced 2021**

Other Achievements

- 90% problems C++ and C language section at HackerRank and HackerEarth and 80+ top interview problems at LeetCode.
- Successfully solved more than **500+** problems across renowned coding platforms such as Codeforces, CodeChef, GfG, and Leetcode.

Key Projects

- **Radio detection of Pev cosmic rays: SURGE Project (Mentor: Prof. Pankaj Jain)** (*April - July 2023*)
  - Researched cosmic rays' shower properties, analyzed their characteristics and behavior during interactions with the Earth's atmosphere and investigated their energy distribution, particle types, and arrival angles using various radio techniques.
  - Installed and configured essential Python packages, including root, CORSIKA/CoReas, and NuRadioMC, on three PCs.
  - Conducted simulations for 200+ files, each requiring approximately 12 hours, and generated HDF5 files for further analysis.
  - Processed data files for analysis in NuRadioReco using the RIT file and developed Python scripts to plot graphs and histograms of the Signal-to-Noise Ratio SNR. Prepared a detailed report on the findings and methodology of the project.
- **Universal Transmitter and Receiver with a RC Car: Course Project (Electronics for Designers)** (*Jan-April 2024*)
  - Designed and constructed a versatile radio transmitter and receiver system for wireless control of multiple electronic devices.
  - We used the NRF24L01 transceiver module with an amplified antenna for a stable 100-meter wireless connectivity range.
  - Incorporated the IMU MPU6050 and joystick components, providing smooth and precise control features for the system.
- **Task Manager App: Self Project** (*June 2025*)
  - Implemented a user-friendly interface with different themes and settings options, allow users to add, edit, and manage tasks.
  - Incorporated features such as rearrange tasks, set flags and priorities, and assign due dates, optimizing task management.
  - Developed a dynamic main page showing an all-inclusive display of pending and completed tasks in the list of created tasks.
  - Integrated user authentication, providing a secure login method via email and password to protect data and ensure privacy.
- **Astro Instruments: S&T Project** (*June 2022*)
  - Acquired knowledge about Geocentric and Heliocentric theory, various ancient instruments, including the ANTIKYTHERA MECHANISM, Astrolabe, Armillary Sphere, Sextant and Sundial, exploring their historical significance and functions.
  - Acquired proficiency in operating different telescopes and comprehending their construction and astronomical applications.
  - We explored the night sky watching using telescopes to observe the Moon, Jupiter, and a multitude of captivating constellations.

Technical Skills

- **Programming Languages:** C, C++, Python, HTML, CSS, JavaScript, Kotlin.
- **Software:** Android Studio, SQL, MATLAB, Arduino IDE, tableu, REAL ESRGAN.
- **Libraries:** Anaconda, TensorFlow, Keras, Node.js.

Positions of Responsibility

- **Web and Design, Manager, Sustainability Cell** (*2023-2024*)
  - design an new innovative website with an interactive sliders, sustainability quiz, virtual eco-tours, and a vast resources library. Calculate your carbon footprint, track green initiatives, and explore sustainable living through a lifestyle blog. Engage in virtual events, support sustainable products, and participate in eco-friendly challenges for a greener future.
  - Actively involved in data collection efforts and contributing to the publication of informative articles on the website.

Relevant Courses

Fundamentals of Computing	Linear Algebra and ODEs
Introduction to Electronics	Quantum Mechanics
Introduction to Manufacturing Processes	Data Science and Algorithms
Supervised Machine Leaning	Advanced Learning Algorithms
Neural Networks and Deep Learning	Structuring Machine Learning Projects

Extra-Curricular Activities

- Achieved an impressive puzzle rating exceeding 2200 on chess.com and triumphed over Chess.com bots with ratings up to 1600.
- Secured an impressive 24th place in the highly competitive Bullet Arena on Lichess and joined the Sadistic Minions team.