

Danish Mehmood

3rd Year UG, Computer Science and Engineering
Indian Institute of Technology Kanpur

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EDUCATION

Year	Degree	Institute	CPI/%
2021 - 2023	B.Tech. CSE	Indian Institute of Technology Kanpur	6/10
2021	Class XII (CBSE)	Mahavir International School, Jammu	96.2%
2019	Class X (CBSE)	Heritage School, Jammu	96.6%

SCHOLASTIC ACHIEVEMENTS

- Secured an **All India Rank** of **4279** in Joint Entrance Examination (**JEE Advanced 2021**) among 0.2 million students
- Secured an **All India Rank** of **6017** in Joint Entrance Examination (**JEE Main 2021**) among 1.2 million students
- Qualified for **NTSE Scholarship 2019** awarded by **NCERT, New Delhi** among 1 million candidates all over India
- Secured **Regional Rank 1** in National Science Talent Search Examination (**NSTSE**) awarded by **Unified Council**
- Bagged several medals in **National Science and Cyber** and **International Mathematics Olympiads** awarded by **SOF**.

KEY PROJECTS

- S.M.A.R.T.E.X** | Course Project: **CS253** | Prof. Indranil Saha, Dept. of CSE, IIT Kanpur Jan'23 - Apr'23
 - Designed a **software solution** used to track and manage the movement of people in and out of campus
 - Managed a **team of 8**, overlooking, distributing, reviewing and editing the work of the team members
 - Designed and implemented the whole **User-Interface** of the software as well as **designed and implemented** a clever way to use a **scanner** from a smartphone to scan the ID cards for **automated** entry and exit on the campus
 - Did the **major part** of the **testing** as well as **documented** everything about the software in **Software Requirement Specification Document, Implementation and Design Document, Testing Document and User Manual**.
- Space Travel System** | Course Project: **CS253** | Prof. Indranil Saha, Dept. of CSE, IITK Feb'23 - Mar'23
 - Implemented a **Space Travel System (STS)** in **C++** language using **Objected Oriented Programming Concepts**
 - Created distinct **classes** for Traveller, Passenger, Astronaut, Commander along necessary login **functions**
 - Provided a space travel **ticket booking** service with **diverse ticket options**, including various passenger types, destinations, prices, and validity periods and ensured smooth operations with **comprehensive function design**.
- Cervical Cancer Screening Prediction** | Course Project: **CS253** | Prof. Indranil Saha Apr'23
 - Developed a **binary classifier** in **Python** for cervical cancer screening prediction using libraries like **numpy, pandas, matplotlib, and scikit-learn** on a dataset with 32 risk factors and 4 target variables
 - Implemented **PCA** for **data extraction** and used **SMOTE** for dataset **balancing** as part of the **pre-processing**. Leveraged **Support Vector Machine(SVM)** and **K-Nearest Neighbour (KNN)** models for **data training**, achieving about **90% Accuracy, Precision, and Recall**. **Data visualization** was also carried out to enhance understanding.
- CV in C** | Summer Project, Stamatics Society, IIT Kanpur May'23-Jun'23
 - Developed a foundational **Computer Vision Library** in **C** language, encompassing core **image processing** techniques
 - Incorporated some standard image processing techniques, notably **edge detection, stereo vision, and optical flow**
 - Extended the functionality of the library by integrating sophisticated algorithms such as **Harris corner detection, Matching, RANSAC, Histogram of Oriented Gradients (HOG), and Scale-Invariant Feature Transform (SIFT)**.
- Intro to ML and DL** | Summer Project, Stamatics Society, IIT Kanpur May'23-Jun'23
 - Acquired basic understanding of the mathematics of some popular **machine learning** and **deep learning** algorithms
 - Implemented said algorithms from by leveraging **Python modules**, augmenting programming proficiency
 - Gained experience in **generating, preprocessing, and visualizing** datasets, crucial steps in the ML pipeline
 - Developed skills in **evaluating** predictions from diverse Machine Learning models, enhancing analytical abilities
 - Applied learnings in a practical context through a **hands-on project**, reinforcing the understanding of ML and DL.
- BlockChain101** | Association for Computing Activities, IIT Kanpur May'22-Jun'22
 - Undertook a comprehensive study of **Blockchain**, learning about **decentralized and distributed systems**
 - Learned about the underlying **Blockchain** technology and its applications in **Bitcoin** and other **cryptocurrencies**
 - Delved into essential **cryptographic concepts**, enhancing understanding of Blockchain's operational mechanics.
- CSE-BUBBLE** | Course Project: **CS220** | Prof. Urbi Chatterjee, Dept. of CSE, IITK Mar'23 - Apr'23
 - Comprehensively designed a unique **32-bit processor**, CSE-BUBBLE, featuring a distinct **Instruction Set Architecture** and a segregated **Instruction and Data Memory system**, enhancing processing efficiency.
 - Devised **op-code formats**, determined the **data path** components, and developed the associated **Verilog** modules
 - Successfully built a **single-cycle instruction execution unit**, reinforcing the comprehensive processor design.

TECHNICAL SKILLS

*Exposure

- **Programming Skills:** C, C++, Python, JavaScript, HTML, CSS
- **Frameworks/Libraries:** Numpy, Panda, Tensorflow, Matplotlib, Scikit-learn, ReactJS, Bootstrap
- **Utilities:** Linux Shell, Bash, Verilog HDL
- **Miscellaneous:** Git, L^AT_EX, AutoCAD*, Colab, Jupyter notebook

RELEVANT COURSES

A - Outstanding Performance

Software Development & Operations(A)	Computer Organization	Linear Algebra and ODE
Discrete Mathematics for CS	Probability for CS	Logic for CS
Fundamentals of Computing	Introduction to Electronics	Introduction to Economics
Web Development Bootcamp (Udemy)	Python Pro Bootcamp (Udemy)	Introduction to Psychology

POSITIONS OF RESPONSIBILITY

- **Company Co-ordinator** | *Students' Placement Office, IIT Kanpur* *Jul'22 - Feb'23*
 - Facilitated the conduction of **presentations** and **tests** of various **companies** coming to the campus for **Internship'22**
 - **Coordinated** with various company officials, and **managed** the **test** and **interview** process of different companies during **Placement drive season'22**, involving **300+ companies** and **1000+ students**, ensuring a smooth process.
- **Seceratry** | *Anime Society, IIT Kanpur* *May'22 - Jan'23*
 - Discussed business models of various established companies within E-cell and assisted in 1st virtual **Buisness Conclave** consisting several workshops, entreprenuerial talks and competitons
 - Assisted in conducting 1st edition of online competitons, talks and workshops under **Entreprenuerial Extravaganza**