PEEYUSH KUMAR

ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech in Textile Engineering	Indian Institute of Technology Delhi	6.47
2022	CBSE	MPS International	72.6%
2020	CBSE	MPS International	94.2%

SCHOLASTIC ACHIEVEMENTS

- **JEE Advanced**: Secured a rank among top **3%** among **1 million+** students in the National Level Entrance Exam   (2022)
- **CLAT**: Achieved distinction by clearing CLAT among **56k+** students in the National Level Law Entrance Exam   (2022)

INTERNSHIPS

- **Michrons Technology Private Limited, Jaipur** : *Python Developer*   (November, 2024 - December, 2024)
  - Engineered a dynamic travel website leveraging **Flask**, **Python**, **HTML**, and **CSS** within a **30 Days** timeline
  - Architected a robust and scalable backend **routing system** using **Flask**, ensuring performance and future **adaptability**
  - Conducted meticulous **code debugging** sessions, optimizing both front and back-end components for **peak efficiency**
  - Acquired and integrated **new technologies** to deliver a sophisticated, **fully functional**, and **user-centric** platform
- **Codebird Technologies Private Limited, Jaipur** : *Python Developer*   (May, 2024 - July, 2024)
  - Modeled **100+** forex markets as weighted directed graphs and applied **Bellman-Ford Algorithm** to identify arbitrage opportunities
  - Integrated **real-time forex rate APIs** to update exchange rates and ensure precise identification of **arbitrage** paths
  - Built a system to calculate and display **net profits**, considering transaction fees, **spreads**, and other market conditions
  - Optimized graph traversal algorithms for scalability and efficiency, enabling real-time analysis of **50+** currency pairs

PROJECTS

- **Autonomous Heavy-Lift Hexacopter Project** *(Self Project)* :   (December, 2018 - October, 2022)
  - Designed a hexacopter with a **2.5 kg** payload capacity, optimizing **structure**, **aerodynamics**, and **power systems**
  - Developed an **autonomous navigation** system using GPS, **control algorithms**, and sensor data for reliable operation
  - Integrated the hardware with software, showcasing expertise in UAV technology, **embedded systems**, and **robotics**
- **Corpus QNA and Document Processing Tool** *(Self Project)* :   (November, 2024 - December, 2024)
  - Created **Dictionary** data structure consisting of **Tries** and **HashMaps** for efficient storage and retrieval of word counts
  - Implemented search engine using **Boyer-Moore** (bad-character heuristic) to return positions after **query refinement**
  - Designed **score function** to return **paragraphs** that cleared threshold and later fed to **ChatGPT** using **OpenAI API**
- **Bank Accounts Database Management** *(Self Project)* :   (June, 2024 - July, 2024)
  - Implemented a **hashmap** for bank account management with a **custom hash function** to minimize collisions and time
  - Implemented hashing techniques such as **linear and quadratic probing, chaining** and compared their efficiencies
  - Modified parameters to **prevent cycles** in quadratic probing and used **double hashing** with **load balancing** for efficiency
- **Percolation** *(Prof. Robert Sedgewick)* :   (July, 2024 - August, 2024)
  - Applied the **union-find** algorithm to store the collection of disjoint sets and identify when the n*n grid percolates
  - Estimated the percolation threshold value **p star** to be **0.593** via the **Monte Carlo** Simulations for sufficiently large n(size)
  - Expertly utilized random **sampling techniques** to accurately estimate the percolation threshold in a **grid-based model**
- **Seam Carving** *(Prof. Robert Sedgewick)* :   (May, 2024 - June, 2024)
  - Developed a content-aware image resizing technique, which identifies and removes least important seams from images
  - Modified **Dijkstra's algorithm**, utilized **index-based priority queue** for minimum energy path, preserving critical image features
  - Implemented various energy functions, including **gradient magnitude** and **Sobel filter**, to accurately assess importance of pixels

TECHNICAL SKILLS

- **Languages**: C/C++, Java, Python, SQL, HTML
- **Libraries**: NumPy, Pandas, Flask, Django ; **Online Courses**: Data Structures and Algorithms
- **Softwares**: Excel, Word, Adobe Photoshop, Premiere Pro, Illustrator, Blender, Autocad, Mission Planner, OriginB

POSITIONS OF RESPONSIBILITY

- **Event Coordinator, Rendezvous'24, BRCA** :   (July, 2024 - October, 2024)
  - Co-ordinated a multi-tier team of **30+** team members to conceptualize, plan & successfully execute the 4 day fashion event
  - Oversaw the coordination of **infrastructure**, **hospitality**, **admin**, **logistics**, and **decor** for multiple high-profile events
  - Secured the **best judges** and **audience** among **200+** events and achieved **50+** participants in the flagship fashion event
- **Activity Head, RendezvousX, BRCA** :   (June, 2023 - May, 2024)
  - Planned, coordinated, and executed the event, ensuring seamless operations for attendee and judge satisfaction
  - Managed budgets and resource allocation effectively, ensuring the event's financial and operational success

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IIT COURSE

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B.Tech in Textile Engineering	Indian Institute of Technology Delhi	6.47

COURSES DONE

Product Realization Through Manufacturing, Chemistry Laboratory, Engg. Visualization & Comm., Engineering Mechanics, Introduction To Chemistry, Language & Writing Skill, Introduction To Engineering, Intro. To Electrical Engg., Intro. To Electrical Engg., Language & Writing Skill-2, Electromagnetic Waves & Qua.mec., Linear Algebra & Diffe. Equa., Physics Laboratory, Polymer Chemistry, Intro. To Biology For Engineer, Fabric Manufacture I, Fabric Manufacture Lab. - I, Structure & Physical Propertie, Tech. Of Tex. Pre. & Fin. Lab., Tech. Of Text. Preparation & F, Yarn Manufacture I, Yarn Manufacture Laboratoryi, Mechanics Of Solids And Fluids, Electromagnetic Waves & Qua.mec., Intro. To Computer Science, Introduction To Chemistry, Fabric Manufacture Ii, Fabric Manufacture Lab Ii, Manufactured Fibre Technology, Tech Of Textile Coloration Lab, Tech. Of Textile Coloration, Yarn Manufacture Ii, Yarn Manufacture Lab Ii, Indian Fiction In English

POSITIONS OF RESPONSIBILITY

• Activity Head, RendezvousX , BRCA (June, 2023 - May, 2024)