



## Aman Pushkar

Roll No.: MC22BT004

B.Tech in Maths and Computing

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## PROJECTS

- **Peer-to-Peer VoIP Platform** [Link]
  - Built a peer-to-peer VoIP app using Python sockets and UDP for real-time audio.
  - Implemented peer discovery, registration, and multithreaded call handling.
  - Gained experience in socket programming and decentralized networking.
- **Implementation of Text-to-Image Model RPG** [Link]
  - RPG: Recaptioning, Planning and Generation through LLM
  - Combination of LLM and Diffusion Model.
  - Contributed to its use-case in Medical Field.
- **A Linux Text Editor with File Encryption** [Link]
  - Gained insights into how a basic text editor works.
  - Worked on making the text editor secure.
  - Structured code for better maintainability.
- **Worked on the Processor Simulator for ToyRISC ISA** [Link]
  - Implemented the ToyRISC Assembler, Discrete Event Simulator and Caches in Simulated Memory System
  - Implemented the simulation of Single Cycle Processor and Pipelined Processor
  - Used Java and Object-Oriented Programming (OOP) principles to enhance code flexibility and maintainability.
- **Fast Fourier Transform and Its Applications** [Link]
  - Implemented DFT and FFT
  - Gained experience in analyzing and transforming signals using Fourier techniques
  - Applied Fast Fourier Transform for Image Compression and Audio Filtering
- **Strategic Five** [Link]
  - Tools & technologies used: Pygame, Python
  - Algorithms used: Monte Carlo Tree Search, Minimax with alpha-beta pruning
  - Used MCTS to make informed decisions in complex, uncertain environments, applicable beyond gaming.
  - Structured the code for better maintainability and readability.
- **CardioBeats.AI** [Link]
  - Algorithm used: Polynomial Regression
  - Gained insights into healthcare data and how to apply machine learning techniques in the medical field.
- **KnowledgeNest** [Link]
  - Tools & technologies used: Nextjs, MongoDB
  - Developed a user-focused platform that connects learners with experts offering structured roadmaps and guides for mastering specific subjects and skills.

## EDUCATION

- **Indian Institute of Technology, Dharwad** 2022-2026  
B.Tech in Mathematics and Computing CPI: 8.79
- **Delhi Public School Eldeco, Lucknow** 2021  
CBSE (Class - 12) Percentage: 96.2
- **St. Peter's School Ambedkarnagar** 2019  
ICSE (Class - 10) Percentage: 92.8

## SKILLS

**Technical Skills:** C/C++ | Java | Python | GitHub | Docker | Kubernetes | PyTorch | JavaScript | React.js | Bash | Scripting | Linux | Node.js | NS3

**Soft Skills:** Communication | Time Management | Teamwork | Creativity | Problem-Solving | Critical Thinking

**Relevant Coursework:** Introduction to Mathematical Finance | Statistics | Data Structures and Algorithms | Computer Architecture | Operating Systems | Computer Networks | Data Analysis | Mathematics for Data Science | Stochastic Models