Pranav Kapoor

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Experience

- **AI Intern** *May 2025 - Present*
  Internship Tech Mahindra
  - Working on creating a 4-agent LLM pipeline using Crew AI that mimics how Tech Mahindra's A2A product automates internal IT ticket handling with each agent having a specific role — reading tickets, classifying them, resolving, and dispatching a response within 6s with 90–95% accuracy. [ ]

- **Undergraduate Researcher** *Jan 2025 - Present*
  Researcher AMS Lab, IIIT Delhi
  - Implementing a RISC-V 3-stage pipelined processor to detect heart murmurs by expanding the RISC-V ISA, including a custom FFT instruction which calculates N-point FFT. [ ]

- **Research Intern** *May 2025 - Present*
  Researcher University of Illinois Urbana-Champaign
  - Reading and presenting research papers on various Software Engg. topics including Mutant Labelling.

Education

- **IIIT Delhi** *Nov 2022 - May 2026*
  B.Tech (EVE) New Delhi, India
  - CGPA: 7.7/10

Projects

- **Classifier of Handwritten Digits** *Feb 25 - Mar 25*
  Tools: [Python,Numpy,Matplotlib,Machine Learning,Statistics] [ ]
  - Implemented a classification pipeline for three specific handwritten digits (0, 1, and 2) from the MNIST dataset using classic statistical techniques—specifically, Maximum Likelihood Estimation (MLE), Principal Component Analysis (PCA), Fisher's Discriminant Analysis (FDA), and Discriminant Analysis (LDA/QDA).

- **Maze Generator and Solver** *Sep 24 - Nov 24*
  Tools: [Python, Tkinter,BFS,DFS] [ ]
  - Built an interactive maze visualizer in Python using Tkinter, with DFS-based maze generation and BFS-based pathfinding on an implicit grid graph.

- **Process Scheduling Simulator** *Sep 24 - Oct 24*
  Tools: [C,Scheduling Algorithms,OS] [ ]
  - Designed and implemented a CPU scheduler simulator in C, featuring First-Come-First-Serve (FIFO), Shortest Job First (SJF), and Shortest Remaining Time First (SRTF) algorithms.

- **Memory Management System Simulation** *October 24 - November 24*
  Tools: [C++,Paging, Clock Algorithm] [ ]
  - Engineered a C++ memory management simulation incorporating a two-level page table and TLB caching to emulate real-world operating system memory allocation, enabling testing of memory bounds.

Password Manager *Jun 25 - Present)*
Tools: [Python, SQL] [ ]
- Password Manager is a simple command-line application that securely generates and store passwords for different accounts. It uses MySQL database to store the encrypted passwords and Python to implement the logic and interface.

Skills

- **Programming Languages:** C, C++, Python, SQL , Verilog
- **Database Systems:** MySQL, MS Excel
- **Mathematical & Statistical Tools:** Probability and Statistics, Linear Algebra
- **Subjects:** Operating Systems , Object Oriented Programming , Data Structures and Algorithms, Computer Architecture (RISC-V)