Pramag Basantia

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Education

Indraprastha Institute of Information Technology Delhi (IIITD) Jul 2024 – Jul 2028
B.Tech in Computer Science and Applied Mathematics *Delhi, India*

- **CGPA: 8.90** *(Ranked 2nd in the Stream)*
- **Relevant Coursework:**
  - **Core CS:** Data Structures & Algorithms, Operating Systems, OOP, Computer Architecture (RISC-V), DBMS
  - **Mathematics:** Linear Algebra, Probability & Statistics, Discrete Structures, Real Analysis

Projects

University ERP System | *Java, Swing, Maven, MySQL, TCP* | Source Code Sep 2025 – Nov 2025

- Developed a robust **multi-module client-server** desktop application capable of managing **500+ course enrollments**.
- Engineered a **custom TCP protocol** implementing 25+ unique commands to handle **secure authentication**.
- Integrated a **real-time notification system** using polling-based state management, improving **UI responsiveness by 25%**.

EGOS Operating System Enhancement | *C, RISC-V* | Source Code Oct 2025 – Dec 2025

- Architected a **Multi-Level Feedback Queue (MLFQ)** scheduler to **optimize CPU usage** via dynamic process demotion.
- Developed **kernel-level system utilities** (grep, wcl) by bypassing standard libraries and utilizing **direct syscall interfaces**.
- Implemented comprehensive **process lifecycle tracking**, capturing **7 real-time metrics** across various kernel interrupt handlers.

RISC-V Assembler & Simulator | *Python, Assembly* | Source Code Jan 2025 – May 2025

- Built a complete RISC-V assembler from scratch, handling complex **lexical parsing** and **precise binary encoding**.
- Devised a **cycle-accurate simulator** featuring 32 general-purpose registers and 64KB memory with **precise execution logic**.
- Designed a **modular automated testing framework**, validating system integrity against **20+ rigorous edge cases**.

Project Manager Web App | *React, Next.js, TS, Tailwind* | Source Code Sept 2025 – Dec 2025

- Deployed a **full-stack** task management application featuring **real-time state synchronization** using the **React Context API**.
- Optimized **workflow efficiency by 30%** through the implementation of **dynamic sorting** and complex filtering algorithms.
- Designed an **interactive analytics dashboard** incorporating circular progress visualization for tracking project metrics.

Achievements

- **CodeForces Specialist:** Achieved a maximum rating of **1509** (Handle: Pramag_IIITD).
- **All India Rank 137** in CodeForces Round 1017.
- **All India Rank 131** in CodeForces Round 1065.
- **Meta Hacker Cup 2025:** Secured **Global Rank 2000** in Round 2 and **Rank 2444** in Round 1 (Top 15%).
- **ICPC Collegiate:** Secured **Rank 56** in ICPC de-Tryst (IIT Delhi) and **Rank 1281** in ICPC Online Prelims.
- **Contest Achievements:** Achieved **Rank 36** in Algozenith Prelims and **Rank 96** in NIT Silchar Coding Contest.
- **Intra-College:** Secured **Rank 2** in IIITD Prosort and Armsort (Speed Solving); **Rank 3** in Quant Competition.
- **Problem Solving:** Solved over **1500+ algorithmic problems** across LeetCode, CodeForces, and CodeChef.

Technical Skills

Languages: C++, Java, Python, C, SQL, JavaScript
Frameworks: React, Next.js, Java Swing, Tailwind CSS, Maven, JUnit
Developer Tools: Git/GitHub, Linux, Docker, VS Code, IntelliJ IDEA, Figma

Leadership & Involvement

Member | Foobar (IIITD Coding Club) Nov 2025 – Present

- Engaged in competitive coding workshops and collaborated with peers to solve complex algorithmic problems.

Member | Quant Society (IIITD) Jun 2025 – Present

- Participated in discussions on quantitative finance models and algorithmic trading strategies.