Shreyas Mehta

B.Tech. CSE
2023101059
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Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech., CSE	International Institute of Information Technology, Hyderabad	9.83	July 2023 - Present
Senior Secondary	Delhi Public School Patiala	97.4%	2021 - 2023
Secondary	Delhi Public School Patiala	99%	2014 - 2021

Technical Skills

- **Programming Languages:** C/C++, Python, JavaScript, Assembly Language, Bash
- **Databases:** MySQL, PostgreSQL, CockroachDB, MongoDB
- **Tools & Environments:** Git, GitHub, Jupyter Notebook, Chrome DevTools, Arduino, LaTeX, Linux, Overleaf, Fusion 360, Shell
- **Libraries & Frameworks:** Numpy, Flask, Dash, React, Node.js, Bootstrap, Pandas, Matplotlib
- **Web Development:** HTML, CSS, JavaScript, WebSockets, Render

Achievements

- **Dean's List Recognition, IIIT Hyderabad (2023-24)**
  Awarded Dean's List honors in consecutive Spring and Monsoon semesters for outstanding academic performance in first year.
- **National Competitive Examination Performance**
  - **JEE Advanced 2023:** Secured **AIR 1504** (top **0.8%** among 189,744 candidates)
  - **JEE Main 2023:** Achieved **AIR 677** (top **0.06%** among 1.1 million candidates)
  - **KVPY-SA 2022:** Secured **AIR 642**, receiving prestigious fellowship from Indian Institute of Science
- **Academic Excellence at IIIT Hyderabad**
  Achieved highest grades in mathematics courses: **Real Analysis**, **Linear Algebra**, **Probability and Statistics**.
- **National Olympiad Achievements**
  - Qualified for **Indian National Astronomy Olympiad (INAO)** through NSEA
  - **State merit listing** in National Standard Examinations in Chemistry (NSEC) and Physics (NSEP)
  - Cleared **Indian Olympiad Qualifier in Mathematics (IOQM)** in consecutive years (2020, 2021)
  - District topper in **Vidyarthi Vigyan Manthan (VVM)** examination

Publications

- **Machine Learning Integration in Gas Sensors** *(Under Review, IEEE, 2025)*
  Led research on integrating machine learning techniques with gas sensor systems, developing novel mathematical models for environmental factor correlation.
  Role: Primary author responsible for mathematical modeling and ML methodology integration.
  Research conducted under ESW Course, Monsoon 2024
- **Advanced Sensor Calibration Framework** *(Ongoing Research, 2025)*
  Developing innovative mathematical framework to enhance gas sensor accuracy through advanced calibration methodologies.
  Role: Lead researcher for mathematical derivations and calibration technique optimization.
  Research conducted under ESW Course, Monsoon 2024

Projects

NetFileX | *Distributed File Management System* **Technologies:** C, Networking, Multithreading, Distributed Systems, File Systems, Git

Developed a distributed file management system featuring a centralized Naming Server architecture with multiple Storage Servers. Implemented comprehensive file operations including read, write, delete, and metadata querying while ensuring:

- **Centralized Naming Server architecture** with multiple Storage Servers for efficient file management
- **Comprehensive file operations** including read, write, delete, and metadata querying
- **Redundant storage mechanisms** for fault tolerance
- **Distributed architecture** enabling horizontal scalability
- **Thread management for concurrent request handling**

Course: Operating System And Networks
GitHub | Year: GitHub | 2024

Pro-Pixel | *Advanced Media Editing Platform* **Technologies:** JavaScript, HTML, CSS, Python, Flask, CockroachDB, PostgreSQL, JWT, Git, Render.com

Built a full-stack photo and video editing platform featuring:

- **Image upload and video customization** with background music and transitions
- **Secure user authentication** with JWT and role-based access control
- **Admin panel** for managing user access and platform settings
- **Comprehensive media storage** with search functionality
- **Real-time video preview** and customizable output settings
- **Fully deployed online** using cloud services

Courses Taken: Introduction to Software Systems
GitHub | Year: GitHub | 2023

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shreyas.sh | *Custom Unix Shell Implementation* **Technologies:** C, POSIX API, UNIX System Calls, Shell Scripting, GNU Make

Engineered a Unix-like shell incorporating:

- **Support for built-in commands, aliases, and custom functions**
- **I/O redirection and background/foreground process management**
- **Custom logging and process monitoring** for better shell operation
- **Fetches man pages** from the internet for reference
- **Signal handling and process management** for advanced user control
- **Support for executing standard commands** with custom extensions

Courses Taken: Operating Systems and Networks
GitHub | Year: GitHub | 2024

AdvancedXV6 | *Operating System Enhancement* **Technologies:** C, Operating Systems, Scheduling Algorithms, System Calls, XV6, Git

Reengineered the XV6 operating system for RISC-V multiprocessor systems with advanced enhancements:

- **Leveraged modern RISC-V multiprocessor systems** for enhanced performance
- **Implemented custom system calls** (getSysCount, sigalarm, sigreturn) for improved functionality
- Integrated advanced scheduling algorithms:
  - **Lottery scheduling** for fair process selection and resource distribution
  - **Multi-Level Feedback Queue (MLFQ)** for optimized process management and responsiveness
- **Enhanced memory management** and process scheduling for better resource utilization
- **Improved overall system performance** for multiprocessor environments

Courses Taken: Operating Systems and Networks
GitHub | Year: GitHub | 2024

FallSafeTech | *IoT Safety Monitoring System* **Technologies:** IoT, Sensors, Machine Learning, Node.js, Python, Flask, Git

Developed a smart home safety monitoring solution featuring:

- **Real-time fall detection** using sensor fusion techniques for accurate event identification
- **Implemented algorithm from a research paper** for fall detection and classification
- **Automated emergency notification system** for immediate alerts to caregivers
- **Caregiver alert management** and tracking of response times for better monitoring
- **Integrated monitoring dashboard** for caregivers to view real-time alerts and data

Courses Taken: Introduction to IOT
GitHub | Year: GitHub | 2023

SortSync | *Advanced Sorting Algorithm Implementation* **Technologies:** C, Parallel Programming, Sorting Algorithms, Git

Engineered a hybrid sorting algorithm combining:

- **Parallel merge sort optimization**
- **Count sort efficiency** for specific data patterns
- **Comprehensive performance benchmarking**
- **Comparative analysis** against standard sorting algorithms
- **Reported performance improvements** for large datasets

Courses Taken: Operating Systems and Networks
GitHub | Year: GitHub | 2024

Key Courses Taken

- **Computer Science & Engineering:** Computer Systems Organization, Digital Systems and Microcontrollers, Data Structures and Algorithms, Algorithm Analysis and Design, Operating Systems and Networks, Design and Analysis of Software Systems, Data and Applications.
- **Mathematics & Theory:** Real Analysis, Linear Algebra, Discrete Structures, Probability and Statistics, Automata Theory, Performance Modeling of Computer Software, Numerical Algorithms.
- **Specialized Areas:** Machine Learning, Introduction to IoT, Embedded Systems Workshop, Introduction to Software Systems, Computer Graphics.