SAKSHAM SAINI

ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech in Materials Engineering	Indian Institute of Technology Delhi	6.72
2022	Rajasthan Board of Secondary Education	Career World Sr. Sec School, Bundi	92
2020	Rajasthan Board of Secondary Education	ST. Thomas Sec. School, Bundi	94.2

PROJECTS

- **Sudoku solver DancingLinks Algorithm** (May, 2025 - Jun, 2025)
  - Tackled one of the world's hardest Sudoku puzzles, **"AI Escargot"** to explore efficient algorithmic solving approaches
  - Tasked with designing a solver for exact-cover-based Sudoku constraints requiring **low latency and high correctness**
  - Modeled Sudoku constraints precisely using row–column–digit structure to ensure accuracy across all difficulty levels
  - Implemented Dancing Links algorithm in modern **C++17** with a lightweight, header-only design for optimal performance
  - Achieved an average solve time of ~**0.03ms**, outperforming traditional backtracking methods by over **18x** in efficiency
- **Account Management System in Banks** (Feb, 2025 - Mar, 2025)
  - Developed a banking system for managing **1M+** accounts using **custom hashmap**, ensuring secure and efficient storage
  - Implement **4 hashing techniques** with **3 collision resolution strategies**, ensuring **O(1)** insertion and lookups
  - Optimized memory usage for banking operation and a **self-developed hash function**, handling large dataset efficiently
- **YouTube Comment Sentiment Analysis Browser extension** (*self Project*) (Apr, 2025 - May, 2025)
  - Built a **Chrome extension** to analyze commenters sentiment on YouTube videos handling ~**1,000 comments** per video
  - Designed a scalable and robust pipeline to fetch and preprocess ~**sub-1.5s** real-time comments for sentiment analysis
  - Fully deployable via a single **Docker** command with versioned pipelines and logs maintained across iterations
  - Develop a ReactJs based frontend that take data from backend server a perform operations to make user readable
- **TimeQR Sync** (Nov, 2024 - Dec, 2024)
  - Identified need for seamless **cross-device video continuity** while switching between desktop and mobile platforms
  - Required a user-friendly browser extension to generate sharable QR codes pointing to the **exact video timestamp** on YouTube
  - Developed a Chrome extension using **JavaScript and YT APIs** to overlay a **dynamic QR code** with video thumbnail and title
  - Implemented timestamp extraction and QR code generation, button enabling on the iconbar on video live generation
  - Enhanced YouTube viewing experience for cross-device users, with **100%** accuracy in timestamp syncing and **2s** rendering time
- **Granite Prediction using SVD** (*Prof. Divya Nayar*): (Apr, 2025)
  - Analyzed gravity anomaly data over **1,200+ km²** done by geology school China to identify granite-rich geological zones
  - Tasked with **filtering noise** and extracting meaningful, actionable geological patterns from raw gravity signals mapping
  - Applied **Singular Value Decomposition (SVD)** to reduce noise, retaining over **95% energy** in **top-30 components**
  - Built a complete end-to-end solution including a **FastAPI** backend and Streamlit-based frontend for real-time predictions
  - Build a interactive simulation Ui using ReactJs and implement the gradient boosting algorithm to calculate the matrix
- **Large Language Model Pdf Question&Answer App** (Jun, 2025 - Jul, 2025)
  - Faced rising demand for instant answers from massive technical PDFs up to **200 MB** each within an enterprise Gen-AI
  - Needed to achieve *95 % text-extraction accuracy and sustain **sub-**1s* retrieval latency to preserve user confidence
  - Deployed a scalable Q&A app delivering ~**0.8 s** responses with over high accuracy using **FastAPI** service on render

TECHNICAL SKILLS

- **Programing Languages/Libraries:** C++, Python, JavaScript, MATLAB, SQL, ReactJs, NodeJs, ExpressJs, Socket.IO.
- **Tools Ops:** Docker, MLflow, Dagshub, Git/Github, Postman, Vscode, linux Commands, Postman.
- **Database:** MySQL Workbench, MongoDB, PostgreSQL, AstraDB.
- **Competitive programming:** Specialist on Codeforces with Rating **1540+** with 713 rank in contest 1033 div2.

POSITIONS OF RESPONSIBILITY

- **Technical Executive, Entrepreneurship cell (eDC)** (Aug, 2024 - Apr, 2025)
  - Successfully increased the user traffic by ~20% on the website according to detailed web traffic analytics of Cloudflare
  - Work in a technical team of 5 developers to implement improvements in website performance and user acquisition
- **Technical Executive, Board for Sports Activity (BSA)** (Jan, 2025 - Apr, 2025)
  - Built a fully responsive and dynamic website for Sportsfest featuring a seamless and intuitive user interface website
  - Enabled smooth and secure student registration process with organized access to all event-related information
- **Design Executive, Materials Scoiety (CAIC)** (Aug, 2024 - Apr, 2025)
  - Designed event posts for the Materials Society's social media platforms, enhancing visibility and participation
  - Worked with team of 8 society members to enhance user acquisition strategies, resulting in a ~30% increase in post engagement

IIT COURSE

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B.Tech in Materials Engineering	Indian Institute of Technology Delhi	6.72