



EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2026	M.TECH	IIT Kharagpur	8.07 / 10
2023	B.TECH(CSE)	SRM UNIVERSITY	9.38 / 10
2019	HSC	Kendriya Vidyalaya ONGC Vadodara	80.2%
2017	SSC	Kendriya Vidyalaya ONGC Vadodara	9.8 / 10

INTERNSHIPS

Web Development Intern ,Imagica Health | May '25 - July '25

- Developed **RESTful** APIs using **Node.js** and **Express** to effectively manage and process patient data.
- Ensured smooth, reliable, and secure **integration** between the **backend** services and the frontend.
- Integrated **MongoDB** for healthcare data storage and retrieval, improving query efficiency and response time.
- Articulated **API documentation** and **Postman** test collections for easier system testing and developer onboarding.

PROJECTS

Intelligent Decision-Support System for Railway Platform Management

M.Tech Project | Prof. Saptarshi Ghosh & Prof. Abhijnan Chakraborty | IIT Kharagpur | Aug '25 –Present

- Developing a full-stack Railway Control System for Kharagpur Division using **React.js**, **Python**, and **Flask**.
- Integrating a complete operational toolkit featuring **detailed audit logs** and **full CRUD schedule management**.
- Designing a **scoring algorithm** to automate platform assignments, improving efficiency and reducing errors.
- Translating operational requirements from the Railway Division into **scalable software features**.

BLINK DB –High-Performance Key-Value Database

Design Lab | Prof. Niloy Ganguly | IIT Kharagpur | Mar '25 –Apr '25

- Built **BlinkDB**, a C++ persistent key-value store using an **LSM-Tree (memtable SSTable)** for high-throughput writes.
- Optimized reads with a **2Q cache** and **Bloom Filters**, minimizing disk I/O and retaining hot keys.
- Implemented a **multi-threaded TCP server** with **RESP** parser, ensuring **Redis-client compatibility** with **1,000 parallel clients**.
- Benchmarked at **~69k SET/s** and **~72k GET/s** (1M ops in 14.43 s / 13.82 s): **median latency 7 ms** and **>99% requests 21 ms**.

Personalized Actor Recommendation System using Singular Value Decomposition (SVD)

Data Analytics Lab | Prof. Abhijnan Chakraborty | IIT Kharagpur | Sept '24 –Oct '24

- Curated TMDb movie–cast data using requests, **BeautifulSoup**, and fetching **20k** to build actor features.
- Aggregated user ratings per actor to construct a **user–actor interaction matrix** for recommendation modeling.
- Trained and tuned a **collaborative filtering model (Surprise SVD)** via **GridSearchCV**, and **deployed the best model**.
- Evaluated ranking performance using **Precision@5**, **Recall@5**, and **NDCG@5** on an 80/20 split with **87% precision**.

COURSEWORK INFORMATION

Machine Learning | Data Analytics | Algorithm Design & Analysis | Database Management System | Data Structures | Operating System | Deep Learning | High Performance Computing Architecture

SKILLS AND EXPERTISE

Languages : C/C++,Python,SQL,HTML,JavaScript.

Libraries/Frameworks : Pandas, Numpy, Matplotlib, scikit-learn, PyTorch, NLTK, C++ STL,seaborn,NodeJs.

Tools/Ide : Jupyter Notebook/Kaggle, Postman, Visual Studio, GitHub.

ML Techniques:Regression, Clustering, SVM, Decision Tree.

AWARDS AND ACHIEVEMENTS

- Secured **AIR 267 (99.78 percentile)** in **GATE 2024**, also qualified in 2022, 2023 and 2025.
- Secured **International Rank 6722** in SOF National Science Olympiad.
- Database Management Essentials** by **University of Colorado** from Coursera.

POSITIONS OF RESPONSIBILITY

Programming & Data Structures Tutorial and Laboratory (PDS) CS19001

- Responsible for conducting tutorials and helping students understanding the basics of PDS.
- Responsible for grading assignments for a class of **205 students**.

EXTRA CURRICULAR ACTIVITIES

- Swimming: Secured 1st in 200m IM and 2nd in 400m freestyle at the KVS Regionals.
- Learning and understanding about Geopolitical Affairs.
- Guided and Mentored peers in counseling sessions for IITs and GATE (CS) qualified candidates.
- Organized and managed farewell event for graduating senior batch.