

# SACHIN KHOJA

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## EDUCATION

Indian Institute of Technology, Kharagpur

07/2018 - 05/2023

Dual Degree - Bachelor of Technology + Master of Technology

CGPA : 8.39/10

Minor: Mathematics and Computing

Micro Specialisation: Artificial Intelligence and Applications

Major: Ocean Engineering and Naval Architecture

## WORK EXPERIENCE

- **Vellex Computing** San Francisco  
*Software Engineer* 10/2024 - Present
  - Engineered a **scraping engine** to collect regulatory data from 500+ U.S. utility, state, and county federal sources.
  - Automated tariff and interconnection rule extraction with custom **classifiers**, reducing manual data handling by 70%.
  - Implemented semantic search with **NLP** and **vector embeddings**, boosting rule retrieval precision by 80%.
  - Built a dynamic **knowledge graph** linking 500+ utilities, programs, and compliance rules for real-time querying.
  - Delivered **MVP** enabling energy developers to file interconnection applications, improving workflow efficiency by 60%.
- **National Health Authority** New Delhi  
*Software Engineer* 07/2023 - 09/2024
  - Designed a lightweight **flask service** for the face match API, achieving a high throughput of 10,000 requests per second.
  - Architected the AHIPR portal's backend in **Spring Boot**, economizing over 100 man-hours in manual workloads.
  - Accelerated SQL read query execution time from 5s to 500ms using optimized joins, **materialized views**, and indexing.
  - Designed a microservices backend for the CAPF application using **Python and Java**, and integrated **health checks**.
  - Devised a rate limiting solution using the **Hierarchical Token Bucket** algorithm to optimize system performance.
  - Developed a **RAG** pipeline with hybrid search, improving **faithfulness** by 25% and **relevancy** by 30% (RAGAS).
  - Built a hybrid search with **BM25**, **vector search**, and **entity linking**, boosting **recall** by 20% and **precision** by 15%.
- **TimelyAI** Bangalore  
*Software Engineer - Full Stack* 01/2023 - 07/2023
  - Optimized back-end services on **AWS**, reducing resource usage by more than 60% by utilising efficient data caching.
  - Automated Google Maps scraping with **Selenium** based user click simulation, increasing lead conversions by 30%.
  - Orchestrated **AWS Lambda** web scraping solution handling over 10,000 data points daily with network calls and BS4.
  - Crafted a Retool dashboard integrating **microservices** to optimize Google Map Profiles, reducing update time by 80%.
  - Enhanced lead extraction and processing with AWS **Step Functions** and **Athena**, reducing processing time by 90%.
- **Spinny** Gurugram  
*Software Development Engineer* 11/2021 - 05/2022
  - Engineered CDC pipelines for real-time data lakes using **Apache Kafka** and **Debezium**, slashing time lag by 70%.
  - Formulated a car recommendation algorithm using lightFM with regular retraining cycles, reducing costs by over 60%.
  - Deployed the recommendation service as a **Python gRPC** micro-service on AWS, increasing 25% in click-through rates.
  - Leveraged Protocol Buffers for efficient serialization, reducing latency to 50ms by leveraging HTTP/2 communication.

## SKILLS SUMMARY

- **Languages/Databases:** Python, C, C++, JavaScript, SQL, Java, Bash, PostgreSQL, mongoDB
- **Frameworks/Libraries:** Django, Flask, Spring, Spring boot, Hibernate, ReactJs, gRPC, LangChain, Retool
- **Tools/Platforms:** Kubernetes, Docker, Git, Linux, AWS, Redis, Kafka, Elasticsearch

## AWARDS AND ACHIEVEMENTS

- Achieved rating of 1848 on **Codechef** (invincible009) and 1501 (Specialist) on **Codeforces** (invincible\_sachin\_9).
- Qualified for **Meta Hacker Cup** Round 2 by securing a rank of 617 out of 27,603 in the qualifying round, 2022.
- Secured global rank of 1033 out of 23,644 in **Google Kick-start** Round E 2022 coding contest.

## RELEVANT COURSEWORK

Programming & Data Structures, Design and Analysis of Algorithms, Artificial Intelligence, Machine Learning, Object Oriented System Design, Database Management, Operating Systems, Deep Learning, Probability & Statistics