



Parth Sinha

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CodeForces | CodeChef | LeetCode

EDUCATION

Year	Degree/Exam	Institute/Board	CGPA/Percentage
2026	5Yr(BS+MS) Mathematics and Computing	IIT Kharagpur	8.69/10
2021	AISSCE	St. Joseph Public School	88.6 %
2019	AISSE	St. Joseph Public School	95 %

EXPERIENCE

- **JP Morgan Chase & Co. | Link | (Offered PPO)** May 2025 – July 2025
Quantitative Research Intern
 - Coded **exposure delineations** and engineered breaking trades to validate models for **IR Swaps, Futures/Options**
 - Built a **SRI dashboard**, showing complete coverage & reducing model monitoring time by **60%** via error logging
 - Led re-review and testing of a **curve-building model**, contributing to **risk analysis**, transformation, and **Futeq risk**
- **GoQuant | Link** Jan 2025 – Mar 2025
Backend Engineer Intern
 - Developed **trading gateway** for multiple Crypto exchanges using **Websockets, Rest API** and **FIX** Protocol in C++
 - Implemented and executed unit tests with **GTest/GMock**, designing **40+** testing suites and **400K+** test cases
 - Achieved **sub 10 microseconds** latency in trading systems using **multithreading** and optimized **thread pools**
- **CodeBasera Tech | Link** Aug 2022 – Dec 2022
Software Engineer Intern
 - Utilized **Cypher Query Language, Neo4j** for graph database management, and **AWS Cloud9 IDE** for development
 - Employed **MongoDB** for data storage and **GraphViz** for enhancing graph visualization like color, position and shape
 - Incorporated **BFS/DFS** algorithm for family tree visualization using dot file, boosting premium customers by **40%**

PROJECTS

- **Technology General Championship | Solo Gold |Link** Feb 2024 – Mar 2024
Objective: Enhance user experience for movie website using MongoDB Atlas Search and video playback
 - **Developed** video playback website with **VidStack** by chunking video in **m3u8** type, ensuring seamless streaming
 - Integrated **Alan AI** enabling voice search and navigation functionalities, and created **modular CSS** from scratch
 - Pioneered a **RRF** pipeline for **semantic/fuzzy search**, achieving latency under **50 ms**, with **TF-IDF** recommendations
 - **Dockerized** and **deployed** backend on **Azure** VMs and Implemented load balancing using the **round-robin algorithm**
- **RAG-Driven Intelligent Response System** Dec 2023 – Jan 2024
Python, Flask, ChromaDB, LangChain, Hugging Face
 - Created a **Flask**-based web application utilizing **Retrieval-Augmented Generation (RAG)** with **LLama-2 LLM**
 - Implemented efficient storage and retrieval mechanisms for **vector embeddings** using open-source **ChromaDB**
 - Utilized **PyPDF** for parsing PDFs, enabling the training of a **Large Language Model** with domain-specific text

SKILLS & EXPERTISE

- **Skills:** Data Structure & Algorithms, Object-Oriented Programming, Quant Research, Database Systems
- **Programming Languages:** C, C++, Python, HTML, CSS, JavaScript, SQL
- **Libraries:** Numpy, Pandas, Matplotlib, React JS, Express JS, Node JS, MongoDB, LangChain
- **Software/Platforms:** Matlab, Git, Jupyter, Visual Studio, Linux, Hugging Face, Docker

ACHIEVEMENTS

- Ranked **74th** globally and **13th** in India in the **IMC Trading Competition 2025** (Round 1), among 19,000+ participants
- Qualified to Round 2 of **AMEX Campus Challenge** by implementing feature engineering and various **boosting algorithms**
- Positioned global rank 323/27,000+ (top 2%) in Starters 140 and attained a **4-star** rating (**1818**) on **CodeChef**
- Ranked **third** in **Networsify** organized by Optima, **IIT Kharagpur**, by optimizing transport of goods for **Delhivery**
- Achieved **AIR 3399** among 0.14 M candidates in **JEE Advanced** and **AIR 2275** among 0.94 M candidates in **JEE Main**
- Awarded prestigious **Kishore Vaigyanik Protsahan Yojana (KVPY)** 2020 fellowship securing **AIR 1078** in SX stream

COURSEWORK INFORMATON

Programming & Data Structures | Probability & Statistics | Combinatorics & Graph Theory | Theory of Computation
Design and Analysis of Algorithms | Stochastic Processes and Applications | File Organisation and Database System
Machine Learning | Numerical Solution of Ordinary & Partial Differential Equation | Applied Computational Method
Theory of Partial Differential Equation | Transform Calculus | Optimization Techniques | Big Data Analysis