

# Sarthak Kapoor

🌐 sartkap | in sarthak | +91 991 017 5150 | ✉ sarthakkapoor76@gmail.com

## EDUCATION

### IIT KANPUR

B.TECH, COMPUTER SCIENCE

July 2018-2022

CPI: 9.5/10.0

### C.R.P.F. PUBLIC SCHOOL

Rohini, Delhi

Class 12: 97% (CBSE Boards)

Class 10: 10.0 CGPA

## COURSEWORK

Introduction to Computing

Data Structures and Algorithms

Software Development and Operations

Computer Organisation

Operating System

Computer Networks

Introduction to Machine Learning

Compiler Design

Data Mining

Principles of Programming Languages

Principles of Database Systems

Algorithms 2 - Advanced Algorithms

## SKILLS

C • C++ • Python • Javascript

Bash • NodeJS • Git • SVN

HTML • CSS •  $\text{\LaTeX}$  • R • NumPy

GDB • Express • React • SQL

## ACHIEVEMENTS

### SCHOLASTIC

• Received **Academic Excellence Award** for outstanding academic performance

• Awarded the prestigious **Director's scholarship** at IITK

• **JEE Advanced** All India Rank 142

• **JEE Main** All India Rank 360

• **KVPY** fellow with All India Rank 140

• National Talent Search Examination (NTSE) Awardee, 2015-16

### PROGRAMMING

• Among **top 200** Indians on *Codeforces*, **Master** (max rating 2114).

• Among **top 0.3%** Indians on *Codechef*, **5 star** (max rating 2146).

• Stood among **top 50** Indians in **Google CodeJam 2020 Round 1C** among 10,000+ participants worldwide.

## WORK EXPERIENCE

### QUADEYE | SYSTEMS ENGINEER

June 2022 - Jan 2024

- Implemented key features for building and maintaining a **robust, scalable** and **latency-critical** trading platform in **C++**
- Developed **major trading algorithms** in simulation for **modeling** actual exchange behaviour for a number of regions with diverse data formats
- Made significant contributions in implementing **multi process simulation model** reducing the simulation run time by a notable **30%**
- Played a key role in reducing **memory consumption by 50%** in simulations by utilizing in-place algorithms and reducing memory leaks
- Enhanced simulation model to more **accurately replicate exchange behavior**, thereby improving simulation-to-production matching by **20%**
- Took complete **ownership** of two distinct trading regions, **overseeing all production issues** and providing support for **exchange-specific features**
- Refined the SHM protocol by adding support for packet delay and skew
- Conducted latency analysis of various stock markets using **NumPy**

### QUADEYE | SUMMER INTERN

May 2021 - July 2021

- Implemented a model to test the **viability** of **portfolio** and trade orders for **real time** trading in several stock exchanges
- Built unit tests using **Google Catch** and **C++** that maintained over **75% coverage** of the relevant codebase

## PROJECTS

### SUMMER OF CODE | 🌐 EasySale

- Implemented an **e-commerce web application** from scratch which would publish the businesses of small-scale manufacturers online.
- The app boasted of a **intuitive interface** with features like real time order status updation, payment through external API.
- Technology used : PERN (**PostgreSQL, Express, React, NodeJS**) stack.

### C TO X86 COMPILER

Course *Compiler Design*, under Prof. Amey Karkare

- Worked in a team of five members to implement a working compiler for ANSI standard C (C89) to Intel x86(64) assembly
- Implemented support for basic features of C, followed GNU assembler format to support C-library functions

### GEMOS OPERATING SYSTEM

Course *Operating System*, under Prof. Debadatta Mishra

- Implemented various operating system designs such as file system layer, multilevel page tables and virtual memory block on GemOS

### LIFE@IITK | 🌐 life-iitk

Program *Programming Club, Best Social Project*

- Implemented a campus friendly app which helped in **centralising information** about all campus-related events and activities.
- Used **Django, PostgreSQL** and **React** for development of the app.