# Naman Goyal

Final Year Undergraduate
Double Major in EE | BT-CHE
Minor in Industrial Management And Engineering

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## Academic Qualifications

| Year | Degree/Certificate | Institute | CPI/% |
|---|---|---|---|
| 2021 - Present | B.Tech | Indian Institute of Technology Kanpur | 8.43/10 |
| 2021 | Class XII (CBSE) | Global Public School, Kota | 94.2% |
| 2019 | Class X (CBSE) | Global Public School, Kota | 96.2% |

## Scholastic Achievements

- Secured **All India Rank 3909** in Joint Entrance Examination Advanced 2021 among the 1.2 Lakh shortlisted candidates
- Secured an impressive **Academic Performance Index (API) of 9.01/10** for the academic year 2022-23 at **IIT Kanpur**
- Recipient of the **Sarpanch Salik Ram Katiyars Scholarship (2024-25)**, awarded for outstanding academic performance
- Awarded prestigious **Merit-Cum-Means** scholarship **multiple** times by the Ministry of Minority Affairs, Government of India

## Competitive Programming

- Achieved a peak rating of **1643 (Expert)** on Codeforces by earning numerous Global ranks under **1000 (handle:naman2411)**
- Attained a max rating of **1947 (4*)** on CodeChef with Global ranks **under 100 like 30, 90** and **98 (handle:naman2411)**
- Co-ordinated as a **Tester** for the **IIT Madras** Shastra Programming Contest on Codeforces and provided feedback on problems
- Secured an **Global Rank of 287** in **Newton's Coding August 2022 Challenge**, among approximately **4500 participants**
- Accomplished top **global rankings** of **488, 677** and **788** in Codeforces round 946, Edu round 140 and Codeforces round 930

## Work Experience

**Sprinklr**| Product Engineering Intern (*May'25 - Jul'25*)
*Received a **Pre-Placement Offer** for outstanding contribution*

| | |
|---|---|
| **Objective** | • **Simulate** failures and trigger **retryable** methods to ensure **MongoDB** changes reach to **Elasticsearch** intact |
| **Approach** | • **Timeout hardening**: Configured ES **socket-timeout 2 s + connect-timeout 20 ms** to simulate failures<br>• **Idempotent Kafka Retry:** Applied **Spring Kafka @Retryable Topic**, repalying failed ops **upto 5 attempts**<br>• **Change-Stream sync:** Live-tail **MongoDB Change Streams** to push deltas to ES with **in-memory retries**<br>• **Load Testing:** Used **Gatling** script to fire **1 million+ create/update/soft-delete** traffic to test our methods |
| **Result** | • Enhanced **Elasticsearch change-capture** accuracy from **98.3%** (direct transfer) to **99.99 %** via retry methods<br>• Auto-recovered **99.8 %** of simulated Elasticsearch failures within **3 seconds** sustaining negligible data loss |

## Key Projects

**Hacking Arbitrary PUFs** | Course Project (CS771) (*Feb'24 - Apr'24*) Github
**Mentor:** Prof. Puroshottam Kar, Computer Science And Engineering, IIT Kanpur

- Designed **C-SVM** ML model for detection of output of huge number of **Physical Unclonable Function (PUF)** generators
- Optimized **SVM** and **Logistic Regression** models, achieving up to **95% accuracy** and reduced **training time by 30%**
- Implemented optimized hyper-parameter tuning including (**Stochastic, Mini-Batch, Coordinate Gradient Descent**)

**Deep Dive into Web 3.0** | Programming Club, IIT Kanpur (*Jun'23- Aug'23*) Github

- Conceptualized **Block chains, consensus mechanism, EVM** and Studied basics of **Solidity** by deploying **smart contracts**
- Completed basics of Cryptography, Hash functions, types of attacks, analyzed **Proof of Stake, Proof of Work** methodologies
- Prepared a decentralized loaning system using **Object Oriented Programming** paradigm in C++ programming language

**Algo 101x** | Stamatics, IIT Kanpur (*Mar'22 - July'22*)

- Enhanced the knowledge of fundamental **mathematical concepts** relevant to Competitive Programming including **Sieve of Eratosthenes**, Applications of **Greatest Common Divisor (GCD)**, **Combinatorics** and **Chinese Remainder Theorem**
- Solved problems based on **Binary search, Hashing**, **Greedy** Algorithms, **Dynamic Programming** and **Graph** Algorithms
- Analysed **advanced data structures** and **algorithms** such as **Sqrt Decomposition, Segment Trees** and **Fenwick Trees**

**Tic Tac Toe Game** | Self Project (*May'24*) Github

- Created a **player vs computer game** in **C++**, ensuring the **computer never loses** by using strategic algorithms
- Implemented the **MiniMax Algorithm** to evaluate **all possible scenarios**, enabling the computer to make optimal decisions
- Ensured the **computer always makes optimal moves** by considering **different game states and outcomes** in real-time

## Technical Skills

- **Programming Languages:** C++, Java, SpringBoot/SpringKafka, Python, C, HTML, JavaScript, CSS, Solidity, MATLAB
- **Software and Libraries:** MongoDB (Change Streams), Elasticsearch, Apache Kafka, Gatling, Kibana, Git/Github, LaTeX

## Positions of Responsibility

**OOPS in C++ Project Mentor** | Association of Computing Activities, IIT Kanpur (*May'23 - July'23*) Github

- Mentored more than **25** students, teaching the fundamentals of **object-oriented programming** using C++ effectively.
- Introduced mentees to **Standard Template Library (STL)**, classes, constructors, destructors, member functions, operators.
- Educated on advanced OOPs concepts like **virtual functions**, **Encapsulation**, **Abstraction**, **Polymorphism**, **Inheritance**.

## Relevant Courses

**Ongoing*

| | | |
|---|---|---|
| Data Structures and Algorithms* | Introduction to Machine Learning | Fundamentals of Computing |
| Principles of Communications | Linear Algebra and Differential Eqn | Introduction to Economics |
| Introduction to Electronics | Digital Electronics* | Real Analysis |