Utkarsh Gupta

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Mathematics And Scientific Computing
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EDUCATION

Degree	Institute	Year	CPI/%
B.S.	Indian Institute of Technology, Kanpur	2018-Present	9.51/10
Standard XII (ISC Board)	City Montessori School, Lucknow	2018	94.0%
Standard X (ICSE Board)	City Montessori School, Lucknow	2016	94.8%

SCHOLASTIC ACHIEVEMENTS

- Received **Academic Excellence Award**, IIT Kanpur for **two consecutive years** (2018-19, 2019-20).
- Secured **All India Rank 431** in **JEE Advanced** 2018 (among 0.2 million students).
- Attained **All India Rank 1073** in **JEE Mains** 2018 (among 1.2 million students).
- Awarded **KVPY Fellowship** after clearing **KVPY twice** with best **All India Rank 429**.
- **National Top 1%** in National Standard Examination in Astronomy(**NSEA**) conducted by **IAPT**.
- **National Top 1%** in National Standard Examination in Chemistry(**NSEC**) conducted by **IAPT**.

PROGRAMMING ACHIEVEMENTS

- **Global Rank 184** (**India Rank 3**) in **Google Hashcode 2020** among 10k teams.
- **All India Rank - 1** in Dare2Compete **Hackathon** (conducted by 30 IITs + NITs) among 7k teams.
- **Global Rank 55 (India Rank 4)** in **Google Kickstart** Round B 2020 among 10k participants.
- **Global Rank 216 (India Rank 4)** in **Google Codejam** Round 1 and qualified for Round 2.
- **Codechef** - Max Rating **2377 (Orange: 6 stars)** (Among **top 0.2%** in the world).
- **Codeforces** - Max Rating **2222** (**Master** : **Among top 50** in **India**).

PROJECTS AND EXPERIENCE

- **Project Mentor** *Apr 2020 - Jul 2020*
  Programming Club, IITK
  - Mentored 2 **Algorithmic based** Competitive Programming projects and guided 150+ students.
  - Taught many **algorithms** like DFS, BFS, Binary Search, Disjoint Set Union, Hashing, Matrix Exponentiation etc.
  - Helped students in exploring important **data structures** like Queue, Heap, Linked list, Set, Maps, Trees, etc.
  - Guided students in various **graph** algorithms like Dijkstra, Floyd Warshall, Bellman Ford, Kruskal, Prim, etc.

- **Breaking Cryptosystems** *Feb 2020 - Jun 2020*
  Prof. Manindra Agarwal, Course: Modern Cryptology
  - Performed **Cryptanalysis** of some security algorithms like DES(Differential Cryptanalysis), SASAS(AES Attack).
  - Analysed RSA(with low public exponent) and KECCAK(Hashing Algorithm).

- **Deep Dive Into Competitive Programming** *May 2019 - Jun 2019*
  Programming Club, IITK
  - Learned various **algorithms** like Sorting, Binary Search, Dynamic Programming, String algorithms(KMP and String Suffix Stricture), Binary Lifting, Small to large technique etc.
  - Explored many **data structures** including Binary Search Tree, Trie, Sparse Table, bitset, Fenwick Tree, etc.

RELEVANT COURSES

- Data Structures and Algorithms (**A***)
- Fundamentals of Computing (**A***)
- Probability and Statistics
- Linear Algebra
- Modern Cryptology
- Abstract Algebra
- Set, Theory And Logic
- Analysis
- Ordinary Differential Equation

A* - *Exceptional Performance*

TECHNICAL SKILLS

Programming Skills - C, C++, Python, Java.
Miscellaneous - Processing, Arduino, HTML, CSS, Autocad, LaTeX.

VOLUNTEERING AND INTERESTS

- Tested many Codeforces rounds and also acted as a **problemsetter** in some rounds.
- Delivered a session on importance of **Pure Maths** in Competitive Programming attended by 100+ students.
- Participated in Cricket and Badminton in Inferno Hall level sports competition.
- Imparted education to financially weak students living on the outskirts of IIT Kanpur.
- Interested in the field of **Algorithms, Probability, Game Theory** and **Puzzle solving**.