Tushar Garg

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ACADEMIC QUALIFICATION

Indian Institute Of Technology Kanpur   **CPI 8.1/10.0**
Bachelor of Technology, Major in Mechanical Engineering   *2016-2020*
Saraswati Vidya Mandir, Mayapur, Haridwar   **89.2%**
Uttaranchal Shiksha Evam Pariksha Parishad Board, Senior Secondary (XII)   *2016*
Saraswati Vidya Mandir, Mayapur, Haridwar   **82.6%**
Uttaranchal Shiksha Evam Pariksha Parishad Board, Secondary (X)   *2014*

SCHOLASTIC ACHIEVEMENT

- Received an **On Campus placement offer** from **VMock** for **Topcoder** profile
- Received Minor in **Theory of Computer Science** from department of Computer Science, IIT Kanpur.
- Secured **All India Rank** of **1180** in **JEE Advanced** 2016 amongst 2,00,000 candidates
- Secured **All India Rank** of **1876** in **JEE Mains** 2016 amongst 1.2 million candidates
- Secured **All India Rank** of **205** in **JEE Mains B.Arch.** 2016 amongst 2,00,000 candidates
- Secured **24th position** in Uttaranchal Shiksha Evam Pariksha Parishad Board in **Senior Secondary Exam, 2016**
- Obtained position in **Top 1% in State in National Level Olympiad in Physics,** Indian Association of Physics Teacher (IAPT)
- Obtained position in **Top 1% in State in National Level Olympiad in Chemistry,** Indian Association of Physics Teacher (IAPT)

PROJECTS

Modern Cryptology   *Prof. Manindra Agrawal, Jan'20 - Apr'20*
- Worked in a team to **classify and decipher** the ciphered text, encrypted using **Monoalphabetic Substitution Cipher**, **Vigenère Cipher**, and **Substitution and Permutation Cipher**
- Breaked the 3round **Data Encryption Standard** (DES) using, **Differential Cryptanalysis**, 3 round Characteristic of DES in **Python**
- Applied the knowledge of **Finite Fields** and **Group Theory** to break the **EAEAE** structure using a well known attack, **the Square attack**, for **Advanced Encryption Standard**

Finite Element Method   *Prof. Pankaj Wahi, Jan'19 - Apr'19*
- Derived the variation functional for the **1D Transverse Displacement of a String**, and solved it using FEM on Matlab, which **converged precisely to the analytical solution**, if the analytical solution existed
- Derived the variation functional for the **2D flow of an Incompressible and Inviscid flow** and solved it over an **Elliptic Surface** using **Curvilinear Elements** and Realistic approximations

COMPETITIVE PROGRAMMING CONTESTS

- **2469th** World ranking in **Google Code Jam** Round 1A   (Apr '2020)
- **1708th** World ranking in **Google Kick Start** Round B   (Apr '2020)
- **1366th** World ranking in **Google Kick Start** Round E   (Aug '2019)
- **Four star rating** on **Codechef** with **Global Rank 4362** (Handle: tushar_garg)   (Present)
- Expert, Max. **1741 rating** on **Codeforces** (Handle: tushartg)   (Present)

TECHNICAL SKILLS

Programming Languages   C, C++, Python, LaTeX, Java
Operating systems   Windows, Linux

RELEVANT COURSES

Computer Science   Data Structures and Algorithms (A), Fundamental of Computing (A), Thery of Computation, Introduction to Machine Learning (A), Modern Cryptology (A*)
Mathematics   Probability and Statistics (A), Topics in Topology (A), Abstract Algebra, Real Analysis
                          A*: grade for 'Outstanding' performance   A: grade for 'Excellent' performance

POSITION OF RESPONSIBILITY

Student Guide, Counselling Service   *Jul '17 - Aug'18*
- Conducted the Orientation along with other student guides for more than 800 incoming freshmen
- Supervised a group of six freshmen personally to get acclimated to the new college environment

Fresher's Night Coordinator   *Aug '2017*
- Led a team of four members to plan and properly conduct the Fresher's night for all the Freshers
- Optimized the budget of the event and made available all the things which were necessary by interacting with dealers and vendors

EXTRACURRICULAR ACTIVITIES

- Participated in **Fresher's Inferno Card and Board Games** and secured overall second position in 2016.   (Aug '2016)
- Participated in the Freshers night **Fine Arts Club** by creating a painting in the first year   (Aug '2016)
- Junior Executive in Media and Publicity Cell in **Techkriti'16**   (Feb '2017)