Tushar Garg
Senior Undergraduate in Mechanical Engineering

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ACADEMIC QUALIFICATION

Indian Institute Of Technology Kanpur   **CPI 8.1*/10.0**
Bachelor of Technology, Major in Mechanical Engineering   *2016-Present*
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*
*Till the end of the seventh semester

SCHOLASTIC ACHIEVEMENT

o Received an **On Campus placement offer** from **VMock** for **Topcoder** profile.
o Secured **All India Rank** of **1180** in **JEE Advanced** 2016 amongst 2,00,000 candidates
o Secured **All India Rank** of **1876** in **JEE Mains** 2016 amongst 1.2 million candidates
o Secured **All India Rank** of **205** in **JEE Mains B.Arch.** 2016 amongst 2,00,000 candidates
o Secured **24th position** in Uttaranchal Shiksha Evam Pariksha Parishad Board in **Senior Secondary Exam, 2016**
o Obtained position in **Top 1% in State in National Level Olympiad in Physics,** Indian Association of Physics Teacher (IAPT)
o 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*
o Worked in a team to **classify and decipher** the ciphered text, encrypted using **Mono-alphabetic Substitution Cipher**, **Vigenère Cipher**, and **Substitution and Permutation Cipher**
o Breaked the 3-round **Data Encryption Standard**(DES) using, **Differential Cryptanalysis**, 3 round Characteristic of DES in **Python**
o Applied the knowledge of **Finite Fields** and **Group Theory** to break the **EAEAE** structure using, a well-known attack for **Advanced Encryption Standard**, the **Square attack**

Finite Element Method   *Prof. Pankaj Wahi, Jan'19-Apr'19*
o 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
o 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

o **4321st** World ranking in **Google Code Jam** Round 1A
o **1366th** World ranking in **Google Kick Start** Round E   (Aug '2019)
o **Four star rating** on **Codechef** with **Global Rank 5995** (Handle: tushar_garg)   (Present)
o Expert, **1741 rating** on **Codeforces** (Handle: tushartg)   (Present)

TECHNICAL SKILLS

Programming Languages	C, C++, Python, LaTeX, Java
Software	AutoDesk Fusion360, Solidworks, Matlab
Operating systems	Windows, Linux

RELEVANT COURSES

Computer Science	Data Structures and Algorithms (A), Fundamental of Computing (A), Thery of Computation (B), Introduction to Machine Learning (A), Modern Cryptology*
Mechanical Core	Advanced Mechanics of Solids (A), Vibration and Controls (A), Manufacturing Processes II (A) Manufacturing Science and Technologies (A), Engineering Graphics (A)
Mathematics	Probability and Statistics (A), Abstract Algebra*, Topics in Topology*, Real Analysis (C)

A: grade for 'Excellent' performance   *ongoing

POSITION OF RESPONSIBILITY

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

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

EXTRACURRICULAR ACTIVITIES

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