




VARUN GUPTA

Fourth Year Undergraduate
Department of Chemical & Electrical Engineering
Indian Institute of Technology, Kanpur

varungupta9182@gmail.com 
varunGP@iitk.ac.in 
+91-8604606857 

EDUCATIONAL QUALIFICATIONS

Year	Degree	Institution(Board)	CGPA/%
2018 – 2023	B.Tech, CHE & Double Major in EE	Indian Institute of Technology Kanpur	9.34/10.0
2018	ISC – XII	Sheiling House School Kanpur	97.25%
2016	ICSE – X	Sheiling House School Kanpur	95.60%

SCHOLASTIC ACHIEVEMENT

- Achieved **AIR 3490** in **JEE Main, 2018** and **AIR 4535** in **JEE Advanced, 2018** among 1.2 million candidates
- Secured a rank of **337** in **Google Kick Start 2021** Round C among over 12,000 people participating in the round
- Secured a rank of **1705** in **Google Code Jam 2021** Round 1-B among over 37,000 people participating in the round
- Highly active participant on **Codeforces** contests, with the highest rating achieved of **1831** (*handle*)
- Selected at Amazon Machine Learning Summer School 2021

WORK EXPERIENCE

Golden Record in DNA

Technical University of Munich

Research Intern

Jun'21-Ongoing

- Studied linear **error correcting** codes to develop encoding and decoding system for DNA as Information Technology
- Examined construction and geometric properties of **Reed Muller and Polar codes** majorly used in 5-G technology
- Implemented **Reeds Algorithm** to decode code-word based on **Hard decision Majority Logic Decoding** up to half the minimum distance for general RM parameters
- Currently studying methods to improve time complexity for decoding using **Chen's Algorithm**

Kerala Odyssey

School of Innovation, Facebook

Augmented Reality Developer

Mar'20-Jun'20

- Selected in top **250** teams among **10k** teams participating from all over India under their scholarship **AR** program
- Designed and developed** an AR solution deployed on **Instagram** in a team of **2** for travel brand - **Zostel**
- Implemented the logic using **Javascript** and used **Adobe Photoshop and Illustrator** alongside **Spark AR**

CSE@IITK Summer Of Code

Sponsored by Nutanix

Web Developer Intern

May'19-Jul'19

- Engineered a web app, Campus Box to boost the community resources by integrating Car-pooling and Buy & Sell
- Conceptualized and solely designed the dashboard using **Vue.js** framework alongside material library **Vuetify**
- Contributed in logic designing to **optimize** the reads and writes on **firebase console** thereby increasing **scalability**
- Attended workshops on **NodeJS, Django** and **React**

SELF PROJECT

NLP with Disaster tweet

Kaggle

Data Science

Jun'20-July'20

- Pre-processed tweets using **Stemming** and stopwords removal alongside tokenization using **TF-IDF vectorizer**
- Achieved **80% F-1** score using **deep learning** model from TensorFlow to predict tweets with disaster information

RELEVANT COURSEWORK

Data Structure & Algorithm (A*)
Applied Probability & Statistics (A)
Convolutional Neural Network ^γ

Fundamentals of Computing (A)
Numerical Methods in Engineering (A)
Natural Language Processing ^γ

Introduction to Electronics (A)
Control System Analysis (A)
Introduction to TensorFlow ^γ
A*: Exceptional Performance ^γ: Coursera

PROJECTS

Effect of Mobility on Covid-19

Undergraduate Project I

Mentor: Dr. Himanshu Sharma & Dr. H.H. Katkar Jan'21 - May'21

- Analysed various research papers to understand working and shortcomings of **Compartmental** Models in Epidemiology
- Worked on introducing **heterogeneity** to our model using mobility as a factor for associating human interactions
- Theoretically expressed mobility as a function of **population and population density**
- Analysed various combinations using polynomial regression, ridge regression, decision tree regressor and XG Boost
- Modelled **baseline** for Google mobility data-set using contact matrix data developing mobility time-series

Battle of Neighbourhoods

IBM Data Science Professional Certificate

Mar'20 - Jun'20

- Gained valuable insight in data analysis, visualization and Machine Learning techniques from 8 specialization modules
- Proposed a solution to analyse various region in San Diego, California and predict the success of new Shopping complex
- Used **Beautiful Soup** and **Foursquare API** for data collection and applied **K-means** to cluster regions

POSITIONS OF RESPONSIBILITY

Counselling Service, IIT Kanpur

Student Guide

Jul'19-May'20

- Responsible for ensuring a **smooth transition of freshmen** into college, guiding a group of **6 counselees**
- Assisted the core team members in the smooth conduction of the **UG Orientation Program**

Techkriti Open School Championship

Senior Executive

Aug'18-Nov'19

- Worked in **3-tier team** to raise a participation of **50+ schools** and **700+ students** from the city of Kanpur
- Managed the conduction of the examination at IIT Kanpur and co-ordinated with the team for paper setting and results

SKILLS

Programming C/C++, Python, Java, MATLAB
Web Development HTML, CSS, JavaScript, Vue.JS, Vuetify
Data Science NumPy, Pandas, Tensorflow, Scikit-Learn
Software & Tools Spark AR, COMSOL, L^AT_EX, Git

MISCELLANEOUS

- Organized a school level **Tech Fest** successfully conducting events such as debugging, coding and quizing
- Competed and won **3rd position** in High Jump and participated in Inter school **Basketball**