



# Saransh Gupta

Quality Engineering Design and Manufacturing | 17QM30005

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## EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2022	M.TECH Dual Degree 5Y	Indian Institute of Technology, Kharagpur	7.51/10
2016	Senior Secondary Examination	Shiv Jyoti sr. sec. public school, Kota	85.4%
2014	Secondary Examination	Shri Maheshwari sr. sec. public school, Jodhpur	89.5%

## Research Experience

**Research Assistant (Remote)** Mizuguchi Lab, NIBIOHN, Osaka, Japan **Jan 2020 - Sep 2020**

- Contributed to writing a research paper on the prediction of the **Non-small cell lung cancer (NSCLC)** and identify its **potential drug targets**
- Implemented **Boruta Feature selection** and extracted **412 highly contributing genes** out of 10077 which play a key role behind this cancer
- Applied **CatBoost classifier on the 412 genes** to predict the cancer with an accuracy of **99% upon validation and 100% on the test dataset**
- Single-handedly simulated a **Bayesian Network Model** for the "Rho GDI signaling pathway" to detect aberrations & **identify the drug targets**
- This research will lead to an early diagnosis, accurate treatment of the disease **directly impacting the 85% of the total lung cancer patients**
- Tools and Software:** Python, Boruta, TargetMine, CatBoost, scikit-learn, SMOTE, networkx, pgmpy, numpy, pandas, plotly, joblib

## Internship Experience

**Data Analyst Intern** Sapio Analytics PVT LTD **May 2020 - July 2020**

- Worked with the team to build a web based **Decision Support System** for the prediction of **COVID-19 at the hyperlocal level**
- Led to the Innovation of a **Migration-Lockdown based SEIRD model**, reduced the error in predictions up to **4.8%** by optimizing its parameters
- The application is currently being used by **The Govt. Of Telangana** to mitigate COVID-19 spread while maximizing their economic activities
- Tools and Software:** Python, scipy, numpy, pandas, matplotlib, jupyter notebook, AWS, sqlalchemy

**Deep Learning & Computer Vision Intern** Swayatt Robots PVT LTD **April 2020 - June 2020**

- Worked towards automating the feature extraction and bounding box tracking in different conditions of Day light and road semantics
- Programmed **SuperPoint** algorithm, a deep learning approach to extract the features of an image for Point tracking and Visual Odometry
- Trained & tested the **Linear Style Transfer** algorithm to change the semantics of the road and convert frames between day and night
- Tools and Software:** Python, pandas, numpy, tensorflow, pytorch, OpenCv, matplotlib, Jupyter Notebook

## Self-Projects

**Detection of Malaria with Deep Learning** Kaggle [\(GitHub link\)](#)

- Trained a **Convolutional Neural Network** on blood smears images to detect the Malaria Parasite, obtained accuracy of **96%** upon validation
- Used **Image processing** to blur, rotate, resize the image to increase the data-set content and improve the robustness of the model
- Tools and Software:** Python, pandas, numpy, tensorflow, OpenCv, matplotlib, Jupyter Notebook

## AWARDS AND ACHIEVEMENTS

- Awarded as **Intern of The Month** for my contribution as a Data Analyst to the **COVID-19 project** at Sapio Analytics by the CEO of the company
- Got featured in the ISE Newsletter Autumn-2020 under the **Department Spotlight of ISE fights COVID-19** for internship at Sapio Analytics
- Selected for a scholarship of **2200 euros** by The **Aix-Marseille University, France** for the summer internship \*\*
- Secured **Top 5%** position among the total applicants of the summer internship program at **The Institute of Science & Technology Austria**

## SKILLS & EXPERTISE

- Programming & Applications:** Python, C++, R, C, Image Processing, Computer Vision, Machine Learning, Deep Learning
- Software:** Tableau, MATLAB, ANSYS, Solid works, Unity3D, R-Studio, MATLAB, SOLIDWORKS, Visual Studio, MS-EXCEL

## Competitions/Conferences

**International Conference on Human Interaction & Emerging Technologies: Future Applications** **27-29 August, 2020**

- Virtually Presented the research paper on "**Development of a virtual reality based fire training simulator and machine learning based path guidance system: A case of hospital fire breakouts**" at Centre Hospitalier Universitaire Vaudois, **Lausanne, Switzerland**

**Inter-Hall Data-Analytics competition** Azad-Hall, IIT Kharagpur **10 Feb, 2019**

- Awarded with **BRONZE** for the Inter-Hall Data-Analytics General Championship organized by The Technology Students Gymkhana

**Data-Analytics and business case study event** Shaastra-the annual Tech Fair, IIT Madras **6 Jan, 2020**

- Stood **2nd** at the data analytics event DataBuzz | Shaastra, the annual Tech and Innovation fair at IIT Madras

## POSITIONS OF RESPONSIBILITY

**IIT KGP Student Mentorship Program** Student Welfare Group, IIT Kharagpur **From July 2019**

- Mentoring four undergraduate students of the same branch under the shade of Student Welfare Group, IIT Kharagpur
- Responsible for regular counselling of the undergraduate students assigned by the Student Welfare Group, IIT Kharagpur

## CERTIFICATIONS & COURSES

**Department Courses:** Probability and Statistics, Operations Research-I, Programming and Data Structures, Optimization and Heuristic Methods

**MOOC Courses:** Machine Learning, Data Analytics, Algorithms in programming, Deep Learning, 3D Simulations and Virtual Reality

## EXTRA CURRICULAR ACTIVITIES

- Swimmer** at water-polo team of Azad-hall of residence, Inter-hall general championship events, TSG - IIT Kharagpur **March 2018**
- Presentation team member of Inter-Hall Gardening competition team at Azad-hall of residence, TSG - IIT Kharagpur **March 2019**
- Manager at KHOJ**, the annual treasure hunt event conducted by The Azad hall of residence and TSG, IIT Kharagpur **August 2018**

\*\* (cancelled due to COVID-19)