



# Saransh Gupta

Quality Engineering Design and Manufacturing | 17QM30005

E-208, Azad Hall of Residence, IIT Kharagpur

[Website](#) | [Github](#) | [Linkedin](#) | [E-mail](#) | Mob. No: (+91)9530277421

## EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2022	M.TECH Dual Degree 5Y	Indian Institute of Technology, Kharagpur	7.51/10
2016	XII(RBSE)	Rajasthan Board	85.4%

## Research Experience

**Research Assistant | Mizuguchi Lab | NIBIOHN, Osaka, Japan | Guided by [Dr. Kenji Mizuguchi](#)** *Jan 2020 - present*

- Worked on a high-dimensional data containing **10077 genes** with their expression values to predict the **Non-small cell lung cancer (NSCLC)**
- Applied machine Learning for the predictions along with estimating the crucial genes whose content affects this type of lung cancer
- Implemented **Boruta Feature selection** technique to sample out **412 crucial genes** which are mainly responsible for this cancer
- Applied **CUDA enabled CATBOOST classifier** to predict the cancer with an accuracy **99% on validation & 100% test dataset**
- Implemented **Boruta Feature selection** technique to sample out 412 crucial genes out of all which are mainly responsible for this cancer
- Single-handedly programmed a **Bayesian Network Simulation** on "Rho GDI signaling pathway" for **identifying potential 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 softwares:** Python, Boruta, WGCNA, R, TargetMine, Reactome, scikit-learn, SMOTE, Bayesian Belief Networks, Graph Theory

## Internship Experience

**Lead Data Analyst | COVID-19 Indian National Supermodel (INS) | [Sapio Analytics, India](#)** *May - July 2020*

- Led the team of 15 to build an **AI driven DSS** for the prediction of **COVID-19 at the hyperlocal level** based on the **lockdown and migration**
- Single-handedly built a **Migration-Lockdown based Machine Learning driven SEIRD model**, reduced the error in predictions up to **4.8%**
- Directly Impacting the lives of 35 million people of The State of Telangana by helping their Government taking decisions on lockdown

**Deep Learning & Computer Vision Software Development Intern | [Swaayatt Robots, India](#)** *April - June 2020*

- Worked with a team of Computer-Vision enthusiasts and contributed towards automating the feature extraction and bounding box tracking for the simulation of autonomous cars using CARLA Simulator in different conditions of Day light, weather and road semantics
- Programmed **SuperPoint** algorithm, a deep learning approach to extract the features of an image for Point tracking & Visual Odometry
- Trained & tested the **Linear Style Transfer** algorithm to change the semantics of the road & convert day-night in images

## Self-Projects

**Detection of Malaria using blood smears images with Deep Learning | Kaggle** *([GitHub link](#))*

- Trained a Deep Learning model using **CNN** on Malarial and Non-Malarial Pathological Slides to predict the Disease with an accuracy of **96%**.
- Used **Image processing** to blur, rotate, resize the image to increase the data-set content and improve the robustness of the model
- **Tools and Softwares:** Python, pandas, numPy, tensorflow, Convolutional Neural Networks, Opencv, Image Processing.

## AWARDS AND ACHIEVEMENTS

**Intern of The Month** **Sapio Analytics PVT. LTD.** *July 2020*

- Awarded for my impeccable contribution by [Mr. Ashwin Srivastava](#), the CEO of the Sapio Analytics and Forbes 30 Under 30 Asia 2017
- Received **The Letter of Appreciation along with the pre-internship offer** from Mr. Hardik Somani, COO, Sapio Analytics PVT LTD

**The A\*Midex foundation scholarship from Aix-Marseille University | Marseille, France** *May-July 2020*

- Selected for The **A\*Midex foundation scholarship** from Aix-Marseille University worth around **2200 euros** for the summer internship
- Top 5% of the applicants for ISternship, the summer internship program at The Institute of Science & Technology Austria, summers 2020**

## SKILLS & EXPERTISE

- Programming & applications: Python, C++, R, C, Arduino, Image Processing, Video Analytics, Machine Learning, Deep Learning.
- **Tools and Softwares:** 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**

**The Annual Inter-Hall Data-Analytics competition | Azad-Hall | Technology Students Gymkhana | IIT Kharagpur** *10 Feb, 2019*

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

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

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

## POSITIONS OF RESPONSIBILITY

**IIT KGP Student Mentorship Program | Student Welfare Group | Technology Students Gymkhana | IIT Kharagpur | From July 2019**

- Mentoring four undergraduate students of the same branch under the shade of Student Welfare Group, IIT Kharagpur

## CERTIFICATIONS & COURSES

- **Department Courses:** Probability Statistics, Operations and Research, Programming and Data Structures, Optimization 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 during March 2018
- Presentation team member of Inter-Hall Gardening competition team at Azad-hall of residence, TSG - IIT Kharagpur during March 2019
- **Manager at KHOJ**, the annual treasure hunt event conducted by The Azad hall of residence and TSG, IIT Kharagpur during August 2018