Saransh Gupta

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Education

Year	Department/Exam	Institute	CGPA / MARKS
2017-22	Industrial & Systems Engineering (Quality Engineering Design & Manufacturing (Mechanical))	IIT Kharagpur	7.64/10 (till 4th semester)

Professional Summary

- In depth understanding of **basic ML algorithms** like Regression, KNN, Naïve Bayes, Decision Tree classifier, Random-forest classifier, Ensemble models like XGBM, GBM, LGBM, Support Vector Machines.
- Good understanding of **Deep Learning** models like CNN, RNN, LSTM and clustering.
- Familiar with the concepts of computer vision, Natural Language Processing, Virtual-Reality.
- Experienced with **Reinforcement Learning**, Data-Analytics.

Institute Funded Research Project

Contributed in writing a research paper on **"A Machine Learning based path guidance system for safe evacuation of a hospital building in case of fire".**

(*Received appreciation for my contribution to the research paper by the Ministry of Human Resource Development of India on 3rd August*)

Duration: 03 / 2019 – 07 / 2019
Employer: Dr. J. Maiti **(EX H.O.D.)** Department of Industrial and Systems Engineering
Description:

- Created virtual environment of a hospital building with fire in **Unity3D,** tested in **oculus-rift** to collect data from human behavior in case of fire.
- Implemented a unique **Reinforcement Learning** based approach on train data from human behavior to bail out of fire and **show the best path.**
- Methodology behind the research can be used for **safe evacuation** and suggesting **new emergency exits** from a building in case of fire.
- ***Tools and software:*** *Python, pandas, numpy, C#, UNITY3D, oculus-rift, MS-EXCEL.*

Institute Funded Data Analytics/Machine Learning Competition

Title: Predict the type of Network Congestion (*BRONZE Winner*)

Duration: 01 / 2019 – 02 / 2019
Description:

- Worked in the **Visualization** of data-set and then making interpretation of trends Followed by different variables.
- Implemented **SVM**, **Random-Forest Classifier**, **Regression, Decision Tree Classifier**, **XGBOOST-Ensembling**.
- Implemented **Feature Engineering** on the training data-set and finally **XGBOOST** gave **82.55%** train accuracy, **80.66%** test accuracy and MCC score of **0.742**.
- **Awarded with BRONZE** for my work in the General Championship.
- ***Tools and Software:*** *Python, Statistics, Tableau, MS-EXCEL, Scikit-learn, MATPLOTLIB, seaborn, Pandas, numPy.*

SKILLS AND EXPERTISE

Programming languages	Software Programming & Machine learning	Python, C++, C, Design and Analysis of Algorithms
	Front-end web development	HTML, CSS
Software tools	Machine learning and data analytics	R-Studio, Tableau, MS-EXCEL, MATLAB
	Computer Aided Designing and simulation	SOLIDWORKS, ANSYS, Visual Studio
	Virtual Reality & Game Development	UNITY3D, C#

Management Experience

1. teamKART, IIT Kharagpur (JULY 2017 - MAY 2018)
   - **Managed** workshop by teamKART, IIT Kharagpur at Jadavpur University on automotive engineering in 2018.
   - **Convinced** companies to sponsor for the workshop.
   - Managed the car display event at Alumni-Meet 2018, IIT Kharagpur.
   - Contributed in the study of chain-tensioners for the F1 vehicle.

2. Autonomous Underwater Vehicle, IIT Kharagpur. (FEB 2018 – DEC 2018)
   - Mechanical Team Member.
   - Contributed for the research group by simulating the Under Water Vehicle (Kraken 3) in ANSYS Fluent 18.1
   - Designed the torpedo launcher for the Kraken 3 in SolidWorks.

Relevant courses with Certification

- Machine Learning by Andrew Ng | Stanford University (online) | Coursera
- Deep Learning specialization by Andrew Ng | deeplearning.ai (online) | Coursera
- Probability and Statistics (depth) | IIT Kharagpur
- Practical Time Series Analysis | The State University of New York (online) | Coursera
- 3D Models for Virtual Reality | University of London (online) | Coursera
- Introduction to Data-Science | IBM (online) | Coursera
- Operations and Research-1 | IIT Kharagpur
- Algorithms in Programming | Stanford University (online) | Coursera

Achievements

- Cracked **JEE Mains 2017** with rank under **top 0.37** percent out of total appearing **(15 lakh)** candidates.
- Cracked **JEE Advanced 2017** with rank under **top 1.6 percent** out of total appearing **(2.5 lakh)** candidates.
- **All India Rank 4** in Master-Mind Abacus competition held in 2012.
- **Presenter** of the **GOLD** winning team of Inter-Hall Gardening and elocution Competition from Azad Hall of Residence, IIT Kharagpur in March 2019.
- **Swimmer** of the gold winning water-polo team of Azad-Hall, IIT Kharagpur.

Extra-Curricular

- **Mentor** of four students under the Student-Mentor Program 2019 for the academic session 2019-2020.
- **Swimmer and Water Polo** player at Azad-hall, IIT Kharagpur.
- **Manager** at KHOJ 2018, the annual treasure hunt event conducted by Azad hall, IIT Kharagpur.
- **Volunteer** at Spring Fest, the annual cultural festival of IIT Kharagpur.