SARANSH GUPTA | 17QM30005

QUALITY ENGINEERING DESIGN AND MANUFACTURING (MECHANICAL ENGINEERING VERTICAL)(M.Tech Dual 5Y)

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2022	M.TECH Dual Degree 5Y	IIT Kharagpur	7.64 / 10
2016	Senior secondary School Examination (10+2)	Rajasthan Board	85.4%
2014	Secondary School Examination	Rajasthan Board	89.5%

PROJECTS

A Machine Learning based path guidance system for safe evacuation of a hospital building in case of fire. (Under Dr. J.Maiti, Ex. H.O.D, Industrial and systems engineering) (15/05/2019 to 30/06/2019)

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 softwares: Python, pandas, numPy, C#, UNITY3D, oculus-rift, MS-EXCEL.

A Machine Learning model to predict the type of Network Congestion. (27/01/2019 to 9/02/2019)

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.
Implemented Feature Engineering on the training data-set and finally XGBOOST gave **82.55%** train accuracy, **80.66%** test accuracy, MCC score of **0.742**.
Tools and Softwares: Python, Statistics, Tableau, MS-EXCEL, Scikit-learn, MATPLOTLIB, seaborn, Pandas, numPy.

Predict the Sentiments of News-paper Headlines and short description. (21/12/2018)

Successfully implemented XGBOOST on TF-IDF algorithm for *sentiment analysis.*
Built a word cloudchart with the help of given paragraphs in python.
Tools and Software: Python, Tableau, MS-EXCEL, Scikit-learn, Pandas, numPy, word-cloud, tf-idf, bag of words.

Loan eligibility prediction of a person (21/04/2019)

Built a machine learning model to predict the loan eligibility of a person. **(AUC-ROC score obtained was 0.616)**
Tools and softwares: Python, Tableau, matplotlib, seaborn, statistics, MS-EXCEL, pandas, numpy, scikit-learn.

POSITIONS OF RESPONSIBILITY

teamKART, IIT Kharagpur (August 2017 - May 2018)

Managed workshop by teamKART, IIT Kharagpur at Jadavpur University on automotive engineering in 2018, produced funds by calling sponsors.

SKILLS AND EXPERTISE

Programming Language: Python, C++, R, C, C#
Software:Tableau, MATLAB, ANSYS, Solidworks, Unity3D, MS Office.
Technical: Linear Regression, Logistic Regression, Decision Trees, Support Vector Machines, Reinforcement Learning, bagging-boosting, Time series analysis, Neural Networks, Natural Language Processing, Virtual Reality.

COMPETITION/CONFERENCE

Inter-Hall Data-Analytics competition, Azad-Hall, IIT Kharagpur (10/02/2019)

Our Team stood at **3rd** position out of 17 participating teams and were Awarded with **BRONZE** for the Inter-Hall Data-Analytics General Championship competition held on 10 February 2019.

LTFS Data Science FinHack (ML Hackathon), Analytics Vidhya (21/04/2019)

Stood under **90 percentile** candidates with personal score of **0.616**, and the highest score was **0.6731**.

Club Mahindra DataOlympics, Analytics Vidhya (3/05/2019)

Stood under **73 percentile** candidates with RMSE error of **112.1638**, topper's error of **95.81**

Level 2 Qualifiers of Flipkart Grid challenge (online Machine Learning challenge) (15/03/2019)

CERTIFICATIONS

Machine Learning by Dr. Andrew ng | Stanford Online | coursera (04/09/2019)

Deep learning specialization by Dr. Andrew ng | DeepLearning.ai | coursera, (03/25/2019)

Probability and statistics | IIT Kharagpur, (22/05/2019)

Practical Time series | The State University of New York | coursera (18/05/2019)

3D Models for Virtual Reality | University of London | coursera (14/04/2019)

COURSEWORK INFORMATION

Probability and Statistics, Operations and Research, Programming and Data Structures, Machine Learning, Data Analytics, Algorithms in programming.

EXTRA CURRICULAR ACTIVITIES

1. **Mentor** under the Student-Mentor Program 2019 for the academic session 2019-2020.
2. **Swimmer** at water-polo team of Azad-hall of residence, Inter-hall general championship events,IIT Kharagpur.
3. **Presentation** team member of Inter-Hall Gardening competition team at Azad-hall of residence, IIT Kharagpur.
4. **Volunteer** at KHOJ 2018, IIT Kharagpur.