Saransh Gupta

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EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2022	M.TECH Dual Degree 5Y	Indian Institute of Technology, Kharagpur	7.43/10
2016	XII(RBSE)	Rajasthan Board	85.4%
2014	X(RBSE)	Rajasthan Board	89.5%

INTERNSHIPS/PROJECTS

National Institutes of Biomedical Innovation, Health and Nutrition, Osaka, Japan | Remote Research Assistant under Dr. Kenji Mizuguchi, Director of NIBIOHN and Professor at Osaka University   Duration: Jan2020-present

- Predicted the **NSCLC using Machine Learning** and Data of Genes content of proteins which comprises 80-85% of lung cancers.
- Implemented high level ML & DL algorithms like **CATBOOST**, **DBN** to predict the cancer type with an accuracy **99% on the train & 98% test**.
- Implemented **Boruta Feature selection** technique to sample out 363 crucial genes out of the total 10000 available genes.
- Used **Optuna** to fine tune the various parameters of the applied models which increased the accuracy drastically from **~82% to 98%.**
- Deployed **SMOTE** and **ADASYN** oversampling techniques to balance the data-set and **Z-test to remove the outliers** out of the data-set.
- **Tools & Softwares:** Python, Optuna, Boruta, XGBOOST, CAT BOOST, Pandas, Numpy, scikit-learn, SMOTE, ADASYN, Jupyter Notebook.

Development of a virtual reality based fire training simulator and machine learning based path guidance system: A case of hospital fire breakouts | Dr. J. Maiti | Industrial and Systems Engineering | IIT Kharagpur | Duration: 15/05/2019 - 30/06/2019

- Created virtual environment of a hospital building in **Unity3D**, tested in oculus-rift to collect data from human behavior in case of fire.
- Implemented a **Reinforcement Learning based approach** on the train data from human behavior and showed the best path.
- Methodology of our 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, SolidWorks, Windows 3-D Viewer, MS-EXCEL.

Detection of Malaria from Pathological Slides with Deep Learning | Kaggle | Online self-Project | Duration November 2019

- 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.

SKILLS & EXPERTISE

- Programming & applications: Python, C++, R, C, Arduino, Image Processing, Video Analytics, Machine Learning, Deep Learning.
- Software and Tools: Tableau, MATLAB, ANSYS, Solid works, Unity3D, R-Studio, MATLAB, SOLIDWORKS, Visual Studio, MS-EXCEL

COMPETITIONS/CONFERENCES/SCHOLARSHIPS

Selected for The A*Midex foundation scholarship from Aix-Marseille University worth around 2200 euros for the summer internship at Turning Center for Living Systems, Marseille, France. Duration: May 2020 to July 2020.*

International Conference on Human Interaction & Emerging Technologies: Future Applications | Duration: April 23-25, 2020

- 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"** was to be presented at the 2nd International Conference at Lausanne, Switzerland.*

The Annual Inter-Hall Data-Analytics competition | Azad-Hall | Technology Students Gymkhana | IIT Kharagpur | 10/02/2019

- Our Team stood at 1st position based on the MCC score obtained and overall 3rd position out of all participating teams. 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 | Shaastra-the annual Tech Fair | IIT Madras | Date: 6/01/2020

- Selected through a two staged competitive process for the on-campus presentation, won 1st position for the AUC-ROC score obtained and overall standing of the team was 2nd at DataBuzz | Shaastra, 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.

teamKART | Official Formula Student Team | Sponsored Research & Industrial Consultancy | IIT Kharagpur | August 2017 - May 2018

- Managed workshop by teamKART, IIT Kharagpur at Jadavpur University on automotive engineering and CAD softwares in 2018.
- Convinced companies like JCB, MRF to sponsor and support the workshop on the monetary and non-monetary basis.

CERTIFICATIONS & COURSES DONE

- 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.
- Volunteer at Spring-Fest, The Asia's Second Largest annual social and cultural festival of IIT Kharagpur during the session 2017-18.

*(Canceled due to COVID-19)