SAJAL GOYAL

Major: Chemical Engineering, Minor: Industrial and Management Engineering

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Educational Qualifications

Year	Degree/Certificate	Institute	CGPA/%
2022	B.Tech	Indian Institute of Technology Kanpur	8.25/10
2018	CBSE – XII	Kautilya Sr. Sec. School, Kota	89.8%
2016	ICSE – X	St. Peter's College, Agra	95.3%

Honors and Achievements

- Secured **1st** position in the **FinFest Pan IIT Equity Portfolio Management** competition 2021 with **1000+** participants
- Secured **1st** position in **Stock the Stock** competition 2020 by Entrepreneurship Cell, IIT Kanpur with **150+** participants
- Amongst **Top 3** in Round 1 and Overall **Top 30** in **Data Science Hackathon** organised by **Trell** with **2000+** participants
- Secured **All India Rank 1981** in **JEE Advanced 2018** amongst 160,000 shortlisted candidates

Professional Experience

OLA | Data Science Intern
Sep'21 - Dec'21

Objective	• Build **end-to-end workflow** to determine **customer satisfaction** for conversations in **10** Indian languages • Implement machine learning models for **Transcription, Translation** and **Sentiment Analysis** of audio
Strategy	• **Researched** and **evaluated** many state of the art **pre-trained models** available across all ML domains • **Fine-tuned** and modified the input-output layers of pre-trained models to **improve evaluation metric**
Impact	• Delivered complete machine learning pipeline to get customer sentiment trend at the end of the conversation

KPIT Technologies | Data Science Intern
May'21 - Jul'21

Objective	• Deliver an unsupervised **Anomaly Detection** model for real time **health monitoring** of the **engine oil**
Strategy	• Applied LOWESS smoothing on the data of 16 sensors to remove noise and increase efficiency of algorithms • Performed unsupervised **feature selection** using **Deep Neural Network** and bountiful visualizations • Developed **temporal probabilistic** failure prediction model using **Autoencoders** with <**10%** false alarm
Impact	• Achieved **85% recall** on predicting anomalies in engine oil cycle and <**5% reconstruction error** mean

Key Projects

Tweet Sentiment Extraction (*Science and Technology Council, IIT Kanpur*)   *May'20 - Jul'20*
- Built **NLP model** which takes tweet and sentiment as input and outputs part of the tweet which represents that sentiment
- Performed **Exploratory Data Analysis** and stacked **5 layers** on top of **RoBERTa** to increase robustness of the model
- Integrated a **5-fold cross validation** using **stratified** sampling to reduce overfitting and accomplished **0.715 jaccard score**

Autonomous Underwater Vehicle (*Mentor: Prof. Indranil Saha*)   *May'19 - Mar'20*
- Designed **detection** and **tracking** algorithm to detect complex objects and its center under water using **OpenCV** library
- Created **multi-class labelled underwater dataset** for training the State-of-the-Art real time object detection system
- Tweaked the vision layer in the codebase to complete **image processing** tasks meticulously while improving its robustness

Self-Driving Vehicle Simulation (*Mentor: Prof. Venkatesan Kanagaraj*)   *Jan'20 - May'20*
- Pre-processed the **point cloud** data, collected by Velodyne's Puck lidar sensor(VLP-16), in MATLAB to remove invalid points
- Implemented algorithm to differentiate ground points while getting bounding boxes of different objects by **DBSCAN** algorithm

Skills

Data Science: SQL, Pandas, Numpy, Matplotlib, Keras, Scikit-learn | **Robotics**: ROS, OpenCV
Programming Languages: Python, C, C++ | **Utilities**: Excel, LaTeX, MATLAB, Git

Relevant Coursework

Introduction to Machine Learning	Data Mining & Knowledge Discovery	Fundamentals of Programming
Applied Probability & Statistics	Computational Methods in Engineering	Operations Management