# ROHIT SANTRA

M.Tech, Industrial & Management Engineering
Indian Institute of Technology Kanpur

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| Email: | rohits21@iitk.ac.in |
| Contact No.: | 7908703740 |
| LinkedIn: | ROHIT-SANTRA_LinkedIn |
| Git hub: | ROHIT-SANTRA_github |

## ACADEMIC DETAILS

| YEAR | QUALIFICATION | EDUCATIONAL INSTITUTE | PERCENTAGE/CPI |
|---|---|---|---|
| 2021-23 | M.Tech, Industrial & Management Engineering | Indian Institute of Technology Kanpur | 9.00 CPI |
| 2015-19 | B. Tech, Mechanical Engineering | Jadavpur University, Kolkata | 7.36 CPI |
| 2015 | Class XII (WB) | Burdwan Municipal High School | 84.4% |
| 2013 | Class X (WB) | Burdwan Municipal High School | 87.42% |

## EXPERIENCE

### *SUPRA ONCOLOGY* (*Data Analyst Intern*)   *(May 10, 2022-Aug 10, 2022)*

**Project: -- Extraction**, **Structuring** and **Storage** of data for Project **GA** and **CT.**
- Preprocessed and Structured clinical and scientific data dumps provided by the company using **NumPy**, **Pandas, Regex**.
- Worked with large biomedical publication data and segregated them based on **author**, **gene**, **drug**.
- Explored and learned **Mongo dB** for storing and retrieving non structured document data.
- Learned and used various models of **spark NLP** library for clinical and biomedical text mining.

### *AARTI INDUSTRIES LIMITED, GUJARAT* (*Officer Trainee*)   *(June 1, 2019-Sept 19, 2019)*

**Projects: --** Safety Shower installation, Breathing Air system installation, Drinking Water plant installation.

## ACADEMIC PROJECTS

### Applied Machine Learning:

### Machine Failure Prediction---
- Main goal was to build a model capable of predicting possible 'Failure' of machine.
- Encoded categorical features into labelled features and then Scaled all numerical features using robust scaler.
- Obtained correlation matrix for sub-sample and removed outliers using boxplot and distribution curve.
- Dimensionality reduction and clustering were done to estimate possible performance of the model.
- Created 4 models using 4 classifier algorithms (without cross-validation, with cross-validation using Under-sampling).
- Created 2 simple Neural Networks first using Under-sampling and then using SMOTE (Over-sampling) methods.

### Statistical Modelling for Business Analytics:

### Predicting The Chance of University Admission Using Logistic Regression---
- Finding associations between predictors, such as GRE_score, TOFEL, SOP and the binary response Chance of _Admit.
- Both Logit and Probit model were used to do the analysis.
- For Evaluation ROC curve, confusion matrix, sensitivity and specificity of the model were taken into consideration.

### Financial Engineering:

### Mean-Variance Portfolio optimization and allocation of assets---
- 10 stocks of nifty 50 companies were chosen that are working in different sectors like healthcare, bank, automobile.
- Allocation of capital into different stocks were done using the **Markowitz Portfolio** model and the **One Fund Theorem**.
- Used **Excel solver** for the analysis and solving the optimization problem. Plotted the **Portfolio frontier** and the capital allocation line.

### Analytics in Transport and Telecom :

### Coach Trip with Shuttle Service Problem---
- Assigned fleet services to the travelers who were at different bus stops and have to reach a final destination (hub).
- Formulated a MILP with an objective to **Minimize the total cost** associated with the shuttles.
- Solved **MILP** model using **CPLEX** optimization solver to give optimal solution, **Python** API was used to code the problem.

## COURSEWORK AND SKILLS

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|---|---|---|
| Data Mining and Knowledge Discovery | Statistical Modelling for Business Analytics | Applied Machine Learning |
| Probability and Statistics | Analytics in Transport and Telecom | Advanced Decision Models |
| Financial Engineering | Introduction to computing-JAVA | Operation Research for Management |

**CPLEX** | Python (NumPy, **Pandas**, Sklearn, Matplotlib) | **SQL** | **Machine Learning** | Statistical Analysis | Mongo DB

## ONLINE CERTIFICATIONS
- Getting Started with **Python** (Offered by University of Michigan, Coursera)
- Introduction to **Data Science** in Python (Offered by University of Michigan, Coursera)
- Complete **SQL** Bootcamp (Instructed by Jose Portilla, Udemy)
- Complete **Excel** Guide (Instructed by Start-Tech Academy, Udemy)
- Introduction To **Mongo DB** for Data Analytics (Instructed by Brian Dowe, Udemy)

## POSITION OF RESPONSIBILITY AND ACHIEVEMENTS
- Teaching Assistant for **40** students in **Quantitative Methods for Decision Making**, IME Department, IIT Kanpur
- Member of **Media and Culture Team**  IME, IIT Kanpur, responsible for managing Media and Drive for our Dept.
- **ONGC** scholarship holder (UG) from east zone.
- Achieved **A grade** in MATHEMATICS TALENT SEARCH EXAMINATION organized by W.B.M.T.A.