Mohit Gupta

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Educational Details

Year	Program	Institute	Percentage/ CPI
2020-22	M.Tech, Industrial and Management Engineering	Indian Institute of Technology, Kanpur	8.8*/10
2014-18	B.Tech, Metallurgical Engineering	Indian Institute of Technology (BHU), Varanasi	8.24/10
2013	Senior Secondary School	CBSE	Jawahar Navodaya Vidyalaya, Kannauj	87.8/100
2011	Secondary School	CBSE	Jawahar Navodaya Vidyalaya, Kannauj	9/10

*till 2nd semester

Work Experience

Engineer – Ore Dressing, Vedanta (Hindustan Zinc Limited), Udaipur   *(June'18 - Aug'20)*

- Achieved **A Grade** for two consecutive years for being an exceptional performer throughout the tenure
- Increased plant availability of Crusher Section of 2.7 MTPA capacity lead and zinc ore beneficiation plant from **60% to 65%**
- **Commissioned** 650 TPH dry tailing and filtration plant and crusher section of 2.0 MTPA lead and zinc ore beneficiation plant
- Managed a team of **15 individuals** ensuring quality assurance and efficient team management while working as Shift Incharge

Key Learnings: Team Management, Decision Making Capabilities, Process Improvement, Communication Skills, Quality Control and Optimization.

Internship

Data Analyst, IBSFINtech India Private Limited, Bengaluru   *(May'21 - July'21)*

Topic: Statement Optimization - Reading, Labelling and Classification

- Utilized mt-940 python library for mt-940 statement conversion into CSV format; applied preprocessing techniques like **lemmatization, stop-words removal** and Html tag remover for text pre-processing
- Applied feature engineering techniques like **Bag of words, tf-idf** and **Word2Vec** to vectorize text data, **SMOTE and random oversampling** to handle class imbalance
- Performed classification using **Naïve Bayes Classifier, Support Vector Machine and Decision Tree Classifier**

Results: Naïve Bayes Classifier with hyperparameter tuning using **GridSearchCV** performed best with an **accuracy of 0.98** and an **f-1 score of 0.97**

Research Intern, Bhabha Atomic Research Centre, Mumbai   *(May'17 - July'17)*

Topic: Effect of Alloying Additions on Transformation Behaviour of Ni-Ti Shape Memory Alloys

- Created twelve samples of the alloy containing Nickel, Titanium, Iron and Magnesium with different compositions of each and analyzed transformation behaviour using Differential Scanning Calorimetry
- Innovated a way to add Magnesium with retention of parent composition of alloy instead of the traditional method of mixing

Course Projects

Course: Statistical Modeling for Business Analytics   *(Aug'21-Sept'21)*

Topic: Analysis of the Advertising Media on Sales

- Data consisting of sales of the product in 200 different markets with advertising budget in three media – TV, radio and newspaper
- Performed **EDA**, analyzed **correlation matrix**, test for **heteroskedasticity** and checked for multicollinearity using variance inflation factor (**VIF**), also looked for **omitted variable bias**
- Feature elimination is done using recursive feature elimination (**RFE**) based on the **p-value**. **R-squared** and **Adjusted R-Squared** are used as performance metrics

Course: Data Mining and Knowledge Discovery   *(Sept'20-Nov'20)*

Topic: Predicting Life Expectancy using Machine Learning

- Applied preprocessing techniques like **Winsorization** to treat outliers and **Imputation** to handle missing values
- Identified attributes with high **Correlation Factor** and dropped one among the two with lower variance in its data values
- Performed modelling using **Linear Regression, Decision Tree** and **Random Forest** with hyper-parameter tuning using **GridSearchCV**

Results: Random forest performed best among other models giving RMSE of 3.24 in comparison to others giving a minimum value of 8

Topic: Classifying Amazon Food Review

- Applied techniques like null values imputation/removal, **de-duplication** and noise removal for data cleaning and HTML tag, special character, stop-words removal, **stemming** and **lemmatization** for text pre-processing
- Implemented feature engineering techniques like **Bag-of-words**, **tf-idf** and **Word2Vec** to vectorize the text data; **SMOTE and random undersampling** to handle class imbalance
- Applied classification models - **Logistics Regression, Naïve Bayes Classifier** and **Random Forest Classifier** with hyper-parameter tuning using **GridSearchCV**

Results: Logistic regression with bag-of-words giving an accuracy of **0.87** with recall and precision of **0.9 and 0.92** respectively

Course: Applied Machine Learning	*(Jan'21-April'21)*

Topic: *Donor Classification*

- Implemented feature engineering techniques like **one-hot encoding** for converting categorical featured data, **logarithmic transformation** for skewness, **PCA** for dimensionality reduction; **Random Oversampling and Undersampling** to handle class imbalance
- Applied classification models - **Support Vector Machine, Logistic Regression, Random Forest Classifier** and **Naïve Bayes Classifier**

Results: Random Forest Classifier on oversampled data with precision and recall of 0.86 and 0.95 respectively

Topic: *Customer Segmentation*

- Created new column as Frequency, Amount and Recency. Standardization of the data with **StandardScaler** after outlier treatment using **Winsorization Technique**
- Applied clustering algorithms - **k-means** clustering with optimal k is obtained from **Elbow Method** and validated **with Silhouette Algorithm**; Agglomerative Hierarchal Clustering with three clusters based on **Dendrogram**

Course: Analytics in Transport and Telecom	*(Jan'21-April'21)*

Topic: Coach Trip with Shuttle Service Problem, VeRoLog Solver Challenge (2015)

Objective	To assign fleet services to the travellers from different bus stops to a final destination at a minimum cost
Approach	- Formulated problem as **Mixed Integer Linear Programming (MILP) Problem** and solved exactly using **CPLEX** with python as programming language - Created binary decision variable to represent vehicles and cumulative decision variable to take care of constraints on vehicle capacity, maximum stoppage and passengers travel time - Created different conditions on the variable to ensure all given constraints are satisfied - Created and tested our program on two self-created test instances (1: 3 fleets and 3 bus stops, 2: 5 fleets and 5 bus stops) and one from the problem statement (9 fleets and 12 bus stops)
Results	- Achieved optimal solution for the test instances giving minimum possible cost - Maximal running time for data given in the problem was 3 seconds and 1 second for both of the others

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Relevant Courses and Skills

Courses	Data Mining and Knowledge Discovery | Applied Machine Learning | Probability and Statistics | Statistical Modelling for Business Analytics | Analytics in Transport and Telecom | Operations Research for Management | Operations Management | Advanced Decision Models | Probability and Statistics for Business and Data Science (Udemy)
Skills	**Technical:** Python (NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, NLTK, RegEx, Keras) | C++ | SQL | CPLEX | Microsoft Excel | Power BI | Machine Learning | Natural Language Processing | Statistical Analysis | Operations Research | Optimization | Vehicle Routing | Operations Management **Non-Technical:** Team Management, Adaptability, Problem Solving, Analytical Thinking, Decision Making Capabilities, Communication Skills, Interpersonal Skills, Strategic Thinking, Leadership, Team Work

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Position of Responsibility

- Senior Placement Coordinator at Industrial and Management Engineering Department, IIT Kanpur   *(Aug'21-Present)*
  a) Responsible for smooth and successful conduction of placement process for the graduating batch of MTech IME, IIT Kanpur
  b) Supervising junior placement coordinators to help them in their internship recruitment drive
  c) Collaborated with alumni corporate and relation team keeping long term relations with recruiters and the alumni
- Teaching Assistant for the course Data Mining and Knowledge Discovery floated as an open elective subject   *(Aug'21-Present)*
  a) Managing analytics and performance of 58 students enrolled for the course
  b) Responsible for creating questions for the quizzes, semester examinations and clarifying doubts raised by the students
- Internship coordinator of Industrial and Management Engineering Department, IIT Kanpur   *(Sept'20-April'21)*
  a) Part of 4-member team entrusted with the responsibility of successful internship session for the batch 2020-21
  b) Negotiated with FinTech, AgriTech, AI/ML, Logistics companies throughout the country to recruit students from the department
  c) Managed and conducted continuous team meetings discussing the progress, follow-ups and future strategies
- Marketing Coordinator of Anveshan (Annual Technical Fest of the Metallurgical Engineering Department, IIT BHU)   *(Aug'16- April'17)*
  a) Bagged sponsorship of Rs. 1.5 Lakh and record footfall of 75 students from various institutes as participants
  b) Planned and managed team meetings to advance the strategies and goals of the marketing team

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Extracurricular

- Participated in **Amazon ML Challenge 2021** and stood at the top 12% throughout the hackathon among 3200+ other teams
- Secured **3rd position** in a hydraulic power-based event organized by Technex'15 (Annual Techno-Management Fest of IIT BHU)
- Represented JNV, Kannauj in Cluster Level Table Tennis Tournament organized by JNV, Hathras