

SANJIV RANJAN VERMA

MTEch (Industrial and Management Engineering) IIT Kanpur

✉ srv20@iitk.ac.in | 📞 +91-7709492616

🌐 <https://www.linkedin.com/in/sanjiv-verma-2b2907110/>

Academic Details

Year	Degree	Institute	CPI/%
2020-contd	M.Tech, Industrial & Management Engineering	Indian Institute of Technology, Kanpur	6.75
2012-16	B.Tech, Mechanical Engineering	VNIT NAGPUR	7.13
2011	Intermediate BIHAR Board	BASANT COLLEGE BASANT	70%
2009	High School BIHAR Board	V.N.H.S. MAHAMMADPUR	69.8%

Academic Projects

Course: **Statistical Modelling for Business Analytics** | Guide: Dr. Devlina Chatterjee (IITK)

Project: **Medical Insurance Premium Prediction**

- Objective: To predict the cost of medical insurance premium and to study the factors affecting it
- Encoded the categorical data using **OneHotEncoder** and **LabelEncoder** and avoided **Dummy Variable Trap**
- Applied **Simple** and **Multiple Linear Regression** technique
- Incorporated an **interaction feature** BMI OF SMOKERS and significantly improved the Adjusted **R- Square value to 0.82**

Course: **Data Mining and Knowledge Discovery** | Guide: Dr. Faiz Hamid (IITK)

Project: **Prediction of heart failure of a patient**

- Objective: To predict heart failure using medical data of 299 peoples with 12 attributes
- Steps include **Data Pre-processing and Statistical analysis, Data visualization, Explanatory data Analysis (EDA)**, Model building and predicting test data from trained model using Python
- Applied **Logistic regression, KNN, Decision Trees and Random Forest Model**
- Logistic regression gave best F1 score of 0.81

Course: **Advanced Decision Modelling** | Guide: Dr. Vanamala V (IITK)

Term Paper: **Measuring Environmental Performance Under Different Environmental DEA Technologies**

- To measure environmental performance first undesirable outputs are incorporated in the traditional DEA framework then the undesirable outputs orientation (environmental) efficiencies are calculated.
- Various scales are used(**CRS ,NIRS ,VRS**)

Internship

Harvesting India Private Limited

(May'21 –Jul'21)

Project: **Product Recommender System based on Customer Purchase History**

- The aim of this project was to **recommend** crops to buyers based on their purchase history to increase sales.
- Analyzed **data statistics, performed EDA, data visualization**. For generalized recommendations, Popularity based recommender system was built that outputs the topmost popular items with higher probability of being liked by average audience.
- The project mainly focused on **Collaborative Filtering model** that uses information of buyers, their past purchasing behavior and decisions. User-based and Item-based filtering techniques were implemented. Similarity measures like **Euclidean distance, Pearson correlation, Cosine Similarity** were used to calculate similarities among user's behavior. To improve performance, speed up calculations, and avoid the curse of dimensionality – **Matrix Factorization algorithm** was used in building recommender engine. Singular Value Decomposition (SVD) was used to decompose the matrix. For evaluation, **Root Mean Square Error (RMSE), Mean Absolute Error (MAE)** were used. Sci-kit Surprise Library was used to build a collaborative filter based on single value decomposition

Coursework and Skills

Relevant Courses Statical modelling for Business Analytics | Data Mining and Knowledge Discovery | Probability & Statistics | Operations Research for Management | Operations Management | Applied Machine Learning | Advanced Decision Models | stochastic processes and their applications | Introduction to Computing(JAVA)

Skills Python (**NumPy,Pandas,Matplotlib,Seaborn,Sklearn**) | JAVA | R | **SQL** | MS Office (Excel, Word, PowerPoint)

Academic Initiative (24 Month)

Chegg India Pvt. Ltd.

- Work as freelance experts and answer student queries in their subjects i.e. answer questions related to a specific subject posted by students all around the world
- To guide new expert

Achievements and Position of Responsibility

- Secured **99.59 percentile** in GATE (Mechanical Engineering) 2020
- Secured **13706 Rank** in AIEEE 2012 among **12 lakh** Students

Core Team Member of Web Team, IME IIT Kanpur

- Inter-Department Students Body to facilitate all the web related needs of students and website management of the IME department
- Coordinated the end-to-end process of data collection and updating relevant details of 300+ alumni of MTEch IME, IIT Kanpur

Teaching Assistant for the Course COM 200

- Conducted doubt clearing sessions and contributed to discussions for improving the course content and delivery