

NIVEDITA SHUKLA

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Education

Indian Institute of Technology, Delhi
B.Tech. in Material Science

July 2020 – May 2024
GPA: 7.3/10

Experience

Vedanta Resources, Hindustan Zinc Limited
Technical Analyst

May 2023 – July 2023
Udaipur, India

- Analyzed **DPR** over the past year using **Python libraries** to identify bottlenecks in the production process
- Conducted in-depth data analysis to pinpoint issues hindering optimal production and proposed solutions for process
- Suggested adjustments to plant parameters, leading to a **21%** improvement in output when tested in next month

Projects

Risk Estimation of Hypoglycemia (Machine Learning)

Jan 2024

- Developed a **support vector regression (SVM)** model to forecast blood glucose range from previous day's data
- Improved accuracy by **12%** using **multi-penalty regularization** by adding prior information in additional penalty
- Adopted **Meta Learning** approach to circumvent and also automate the issue of choosing weight for the regularization term
- Used **Multi Task Learning** to exploit the relatedness of the parameters and predict the results more accurately

Curie Temperature Modeling using Gaussian process Regression (Prof. Karra SNV)

Sep 2023

- Explored **100+** lattices with Tc ranging from **40 K to 375 K** to establish the relation between Tc and lattice parameters
- Modelled using **GPR** showing good performance with correlation constant being **99.99%** and explored **quadratic kernel** function
- Demonstrated a high degree of accuracy with RMSE, AME being **1.3453** and **0.786** contributing to low-cost estimations of Tc

World Happiness Indicators (Data Analysis)

Sep 2021

- Established correlation between **HI** and **6 Happiness Indicators** from the **WHR** dataset obtained using Gallup World Poll
- Utilized **Python Libraries** and **SQL** on dataset of 158 countries, visualized the data of **3 years** based on six indicators
- Analyzed for the relations among the Happiness factor and explored the affect of **GDP** per capita on life expectancy, social support etc

HashMap based Glossary (Prof. Parag Singla)

Jan 2022

- Implemented a custom and efficient **hash function** from the scratch to hash the strings and store in the vocabulary
- Resolved **collision resolution** issue efficiently, used **quadratic probing** and found the all possible Anagrams of input string

Technical Skills

- **Programming Languages** : C++, Python
- **Tools & Libraries** : Jupyter Notebooks, Git, Latex, MatLab, TensorFlow, Pytorch, Sci-kit
- **Mathematics & Statistics** : Linear Algebra, Differential Equations, Numerical Methods in Engg.
- **ML Techniques**: Linear Regression, Logistic Regression, Support vector Machine, Decision Tree