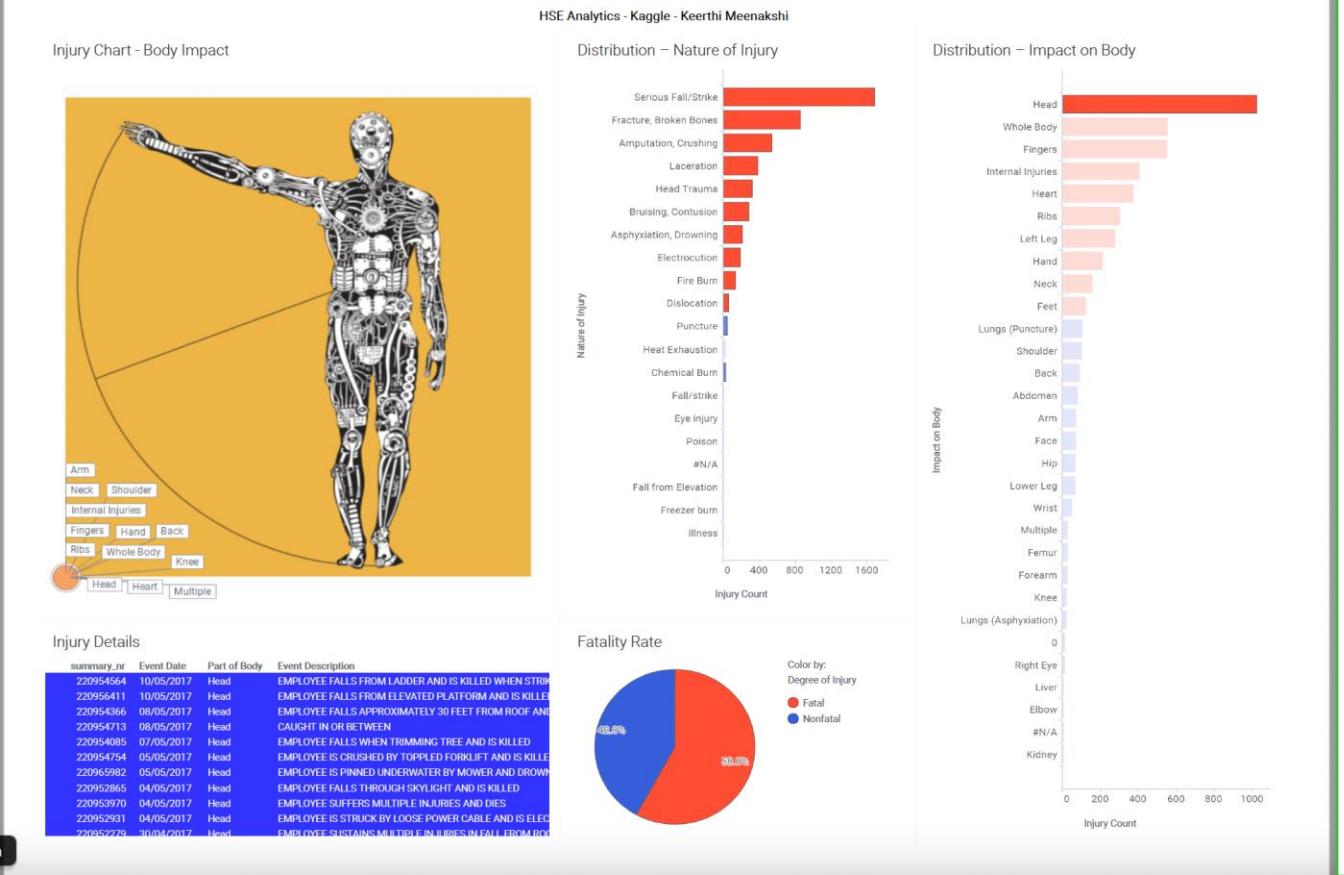
DIGITAL project portfolio

-Keerthi

Project-1
HSE Analytics-Challenge

In the field of workplace health, safety, and environmental (HSE) management, energy companies face a crucial challenge: the effective management of incidents across their operations. Existing procedures heavily rely on detailed incident reports often containing unorganized information, causing significant delays in extracting valuable insights. To improve operational efficiency, these companies are actively investigating technologies capable of extracting pertinent data from unstructured HSE reports.

Solution-HSE Analytics



- To address the above challenge, I developed an intelligent Health, Safety, and Environment (HSE) advisory system using publicly available data from Kaggle, a reputable data community.
- I leveraged open-source tools such as Python, Spotfire, and SQL, utilizing my analytical skills to create a refined dashboard. This dashboard provides a unified representation of incidents within the Mining and Construction Industry.
- The primary objective of this tool is to deliver valuable insights into the relationships between injuries, affected body parts, and their underlying causes. A noteworthy discovery from this analysis is the identification of the ten most frequently affected body parts and a comprehensive understanding of the nature of their root causes.

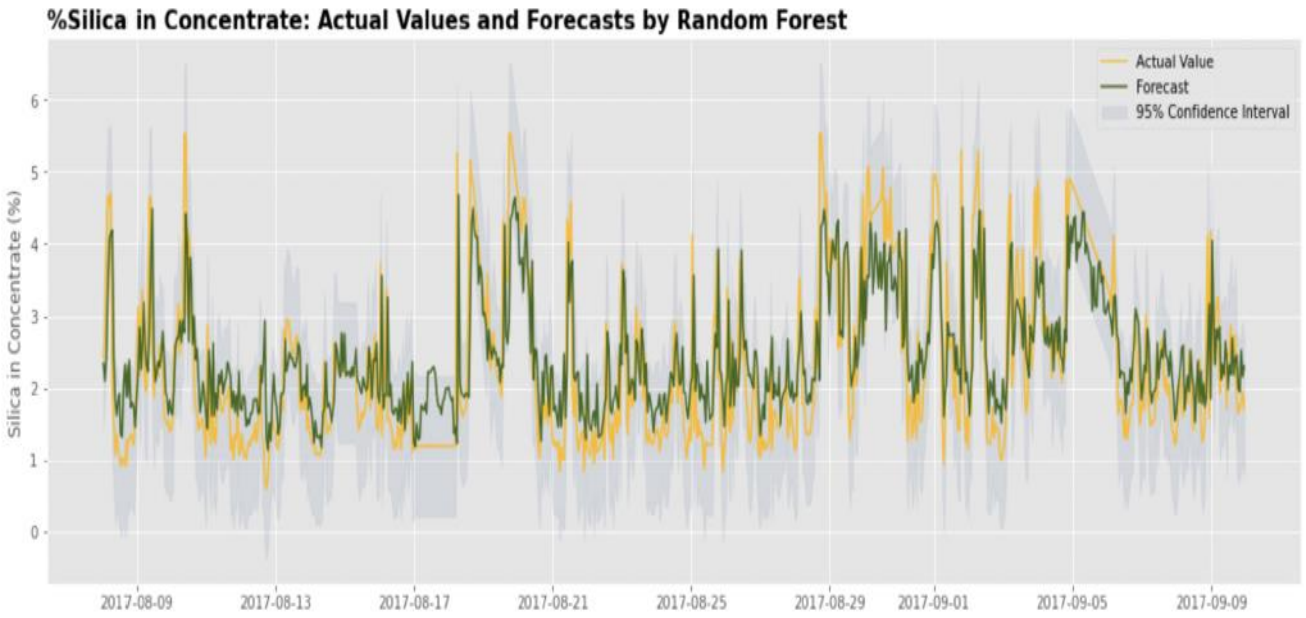
Project-2
Industry Process Optimization Analytics

In the mining sector, the processing of materials extracted from mines presents a challenge due to the presence of a mixed composition containing valuable minerals and non-valuable gangue particles. The primary objective is to achieve an efficient separation. However, a lack of comprehensive knowledge about material properties and limited process visibility can result in significant production losses.

To monitor and optimize the process, periodic sampling of the flotation concentrate is conducted to assess its purity, specifically the percentages of valuable and gangue components. A higher concentration of gangue in the concentrate is unfavourable, as it suggests that a substantial portion of valuable minerals may have ended up in the tailings. Purity measurements are typically carried out in a laboratory setting, and it may take some time before process engineers can implement adjustments based on these results.

Therefore, a prompt evaluation of concentrate purity plays a crucial role in the control and optimization of the flotation process.

Solution-IPO Analytics



To tackle the above challenge, I created a predictive model using a publicly available dataset sourced from Kaggle, a prominent data community. In addition, I utilized open-source tools like Python and scikit-learn while applying fundamental data science techniques, including exploratory data analysis (EDA) and generating forecast trend plots.

The predictive model was designed to forecast the gangue content in flotation concentrate. Notably, it successfully predicted the percentage of silica in concentrate one hour in advance, demonstrating an error rate of less than 1, as measured by RMSE and MAE. This level of accuracy is quite satisfactory. These forecasts present a promising solution for process engineers, enabling them to promptly assess concentrate purity and take corrective measures, particularly when purity deviates from the accepted standards.

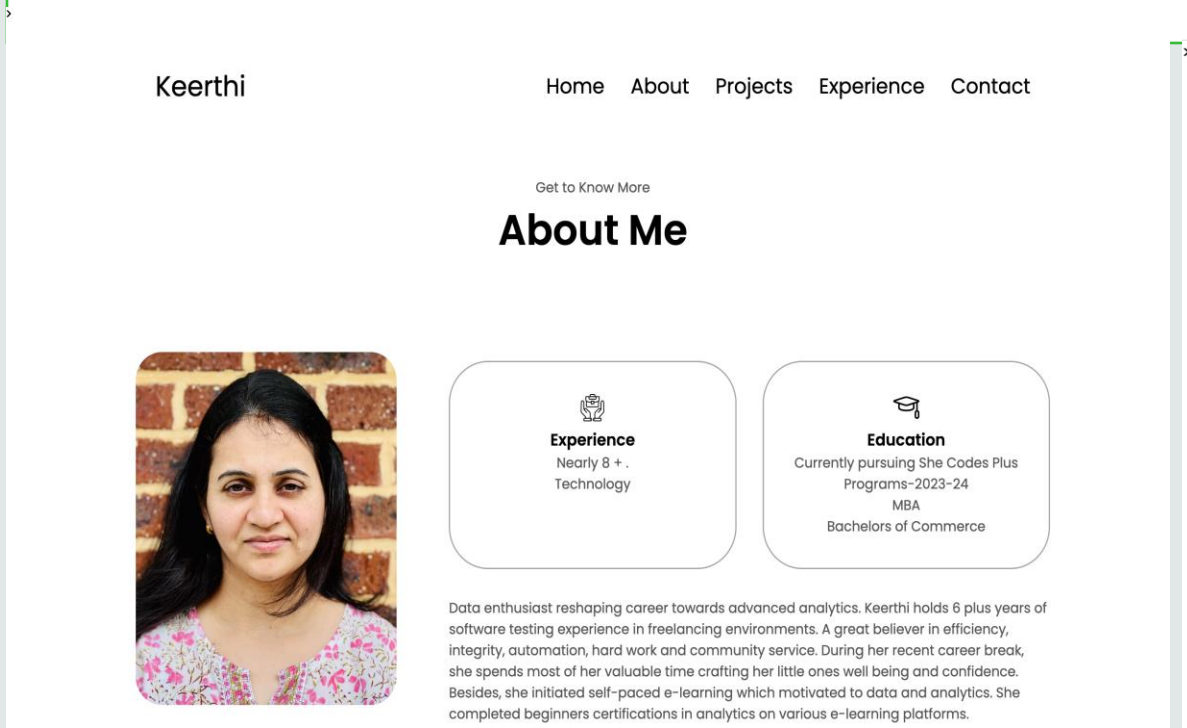
I found the experience of working on this intricate industrial problem and analysing the data to be both enjoyable and educational.

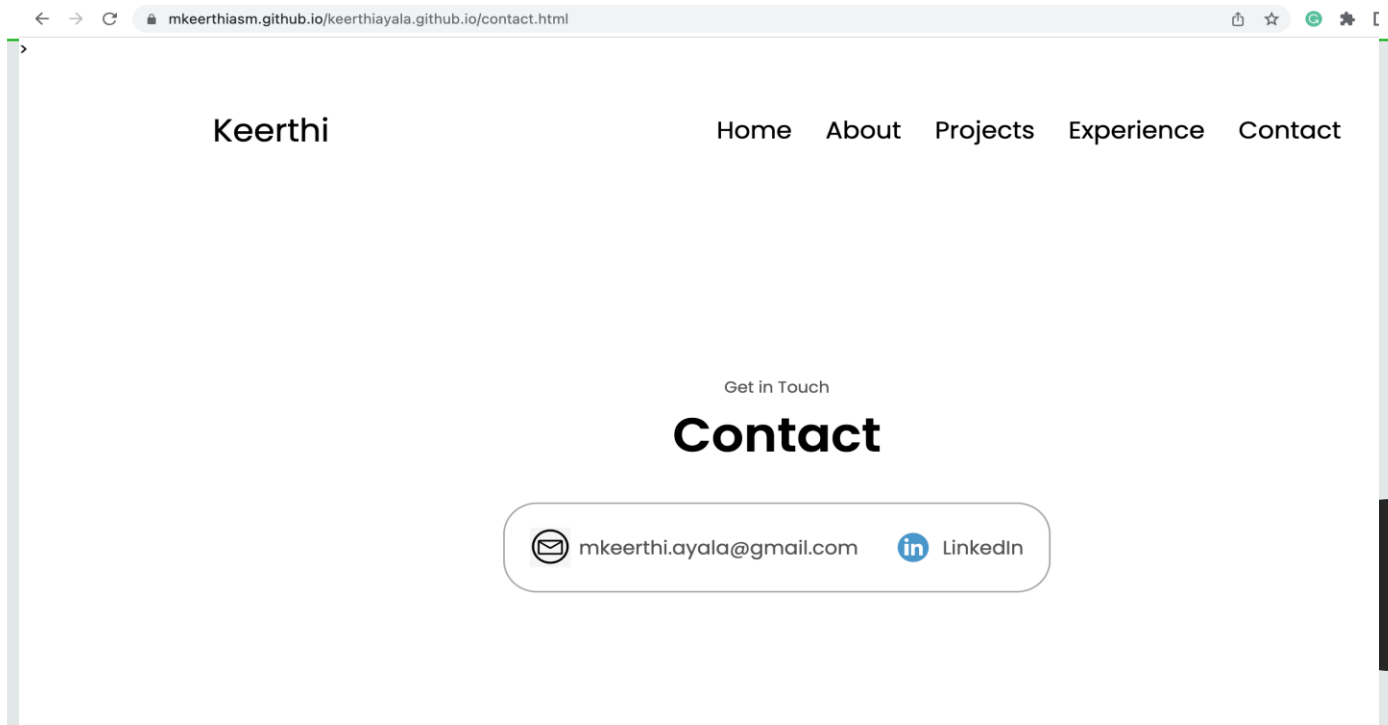
Project-3
She Codes Plus Program-2023-24-Build a portfolio website

Ongoing-Responsive web portfolio

As a participant in the SheCodes Plus program, my 1st assignment involved creating a responsive web Application for my portfolio. This project required me to utilize HTML,CSS , Java Script and deploy the Application upon completion. Additionally, I am engaged in an ongoing project foucsed on developing a Weather app using python. In the portfolio, I have showcased a sneak peek of my current portfolio project, comprising multiple selections and interactive contact form. This experience has offered me a valuable and immersive learning curve with in the realm of software technology .

Link to view the portfolio: https://mkeerthiasm.github.io/keerthiayala.github.io/





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