

PREDICTIVE SOLUTIONS FOR MINING OPERATIONS

A mining conglomerate wanted to enhance operational efficiency by predicting blast outcomes and optimizing resource usage. The goal was to reduce environmental risks, improve safety, and achieve cost-effective mining.

Challenges

1. Inconsistent blast results due to lack of predictive insights.
2. High costs associated with trial-and-error approaches in blasting operations.
3. Difficulty in managing large datasets from mining simulations.

SOLUTION

1. Auto ML Mining Simulation Tool:

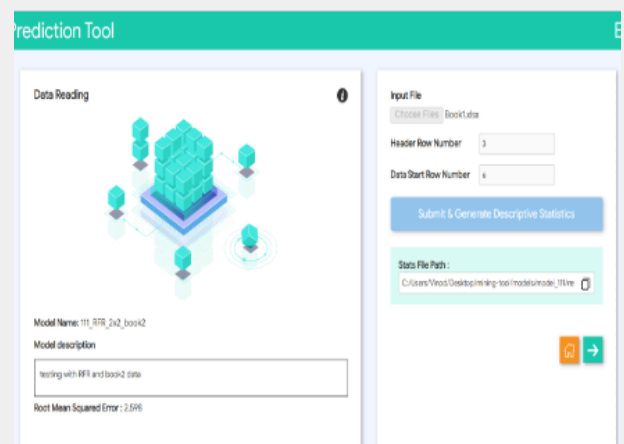
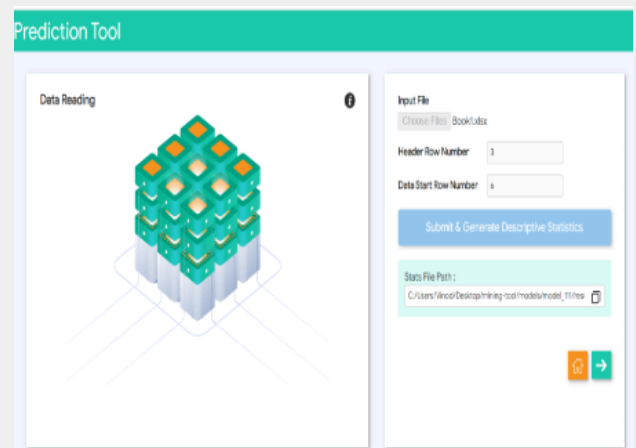
- Developed a multi-output regression model for predicting blast outcomes based on simulation data.
- Enabled self-service model building and validation for mining engineers through an intuitive interface.

2. Real-Time Data Analysis:

- Built an Auto ML platform to train and deploy models with capabilities to retrain based on new datasets.
- Created dashboards for visualizing predictions, model performance, and resource usage metrics.

3. Integrated Reporting System:

- Automated report generation for blast analysis, offering actionable insights for optimization.



IMPACT

- Improved blast result prediction accuracy by 25%
- Reduced trial-and-error costs by 20%, saving significant resources.
- Enabled data-driven decision-making with real-time visualization and reporting.