

# CSE523 : MACHINE LEARNING

## PROJECT :

## SHIPMENT PRICE PREDICTION

## TEAM:

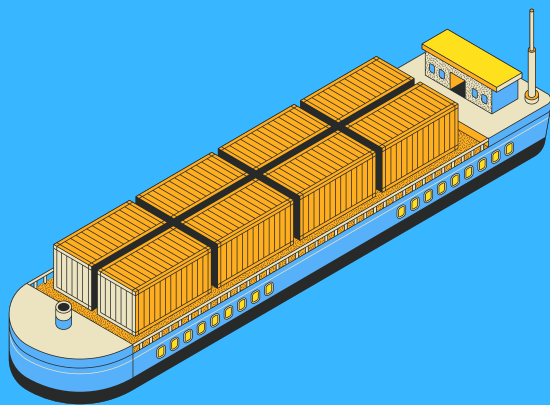
## REVOLUTION



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## ABSTRACT

- 1.The project proposes a machine learning model for predicting shipment prices.
- 2.The model is trained on historical shipment data and uses regression techniques to make predictions based on factors like distance, weight, and transportation mode.
- 3.The model is capable of accurately predicting shipment prices, which can provide valuable insights for businesses in the logistics industry.



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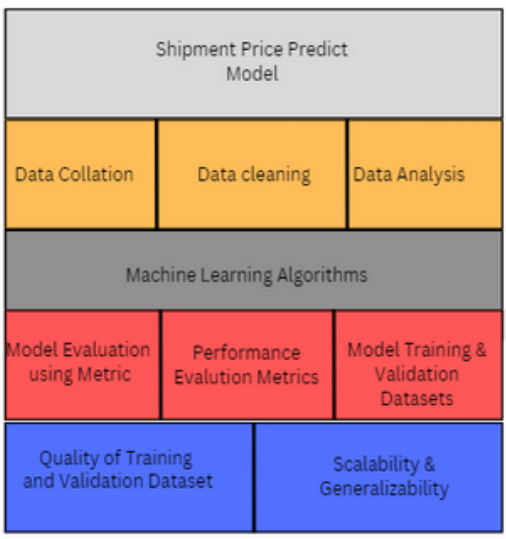
## PROBLEM FORMULATION

- Develop an accurate machine learning model for predicting shipment prices using historical data.
- Evaluate the model's performance on new, unseen data.
- Optimize the model's performance through data cleaning, feature engineering, and hyperparameter tuning.

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## MODEL

1. Shipment price prediction models involve data collection, cleaning, analysis, and machine learning.
2. Model performance is evaluated using metrics like MAE, MSE, RMSE, and R-squared.
3. The quality of the training and validation datasets significantly impacts the model's performance.
4. Scalability and generalizability of the model are important for ensuring accuracy, reliability, and scalability.



Model	Dataset	R2 Value	Root Mean Squared Error	Mean Squared Error
Linear Regression	Y1 Train	0.072260	51.063126	2607.442830
Linear Regression	Y2 Train	0.024017	2.375077	5.640988
deasion tree	Y1 Train	0.85503	20.184923	407.431112
deasion tree	Y2 Train	0.907654	0.730576	0.533742

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## RESULT

1. Decision tree regression was the best model for unit price prediction, and gradient boosting and decision tree regression were the best models for pack price prediction.
2. These models can be used to estimate prices and optimize pricing strategies, providing valuable insights for businesses.
3. Overall, these findings highlight the importance of selecting the appropriate machine learning model for the specific task at hand to achieve optimal performance.

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## CONCLUSION

- Successful demonstration of accurate pricing predictions in the machine learning project for shipment price prediction.
- Further improvements can be made by refining the model through additional feature incorporation and hyperparameter tuning for enhanced accuracy and performance.

