

Lending club loan default prediction



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LET'S GO!

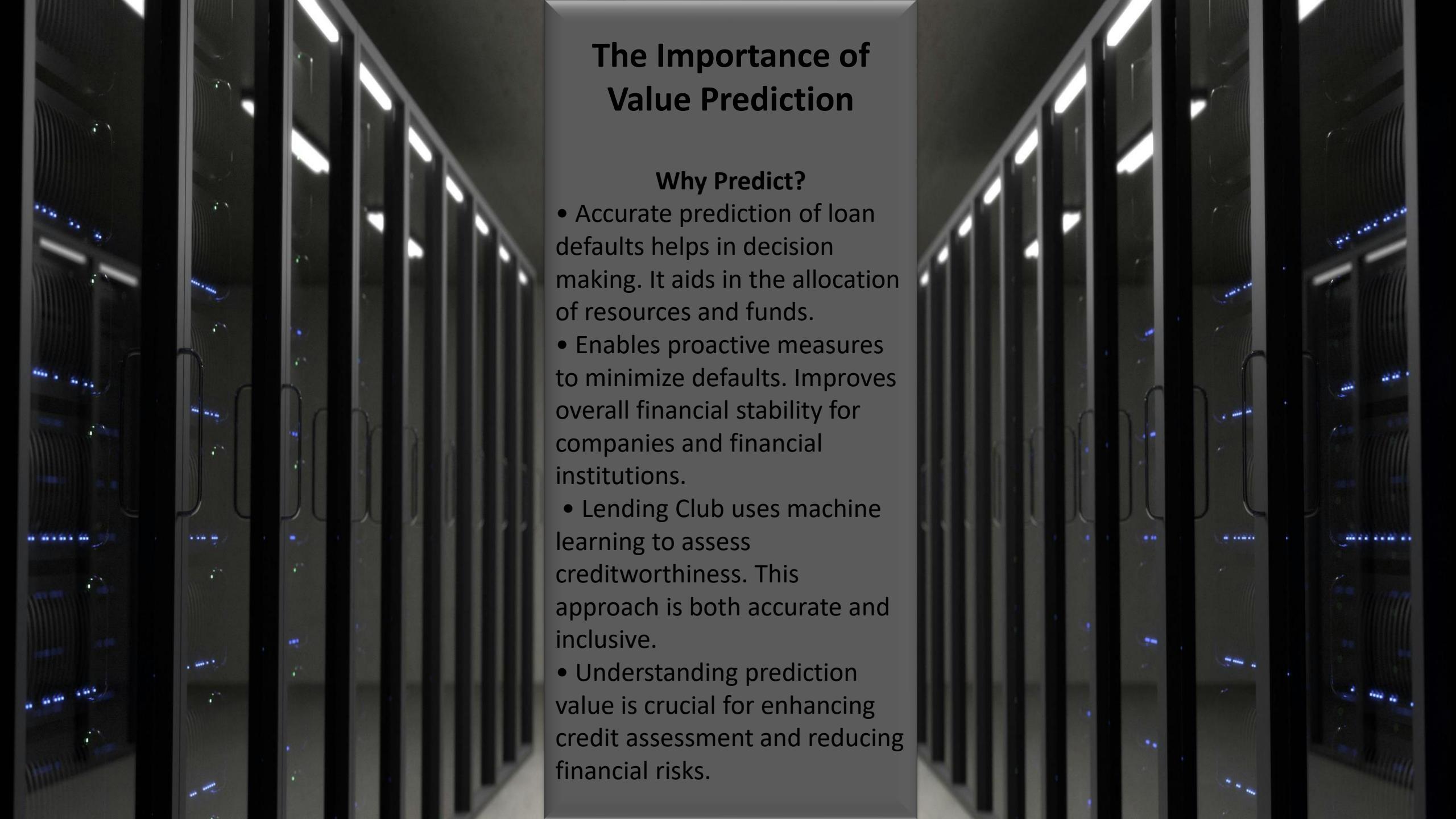
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Understanding Loan Default

- ✓ Loan default happens when a borrower fails to repay a loan.
- ✓ Understanding defaults helps in risk assessment and management.
- ✓ Lending Club is a peer-to-peer lending platform connecting borrowers with lenders for personal loans.
- ✓ Borrowers with a good credit history get loans at lower rates.





The Importance of Value Prediction

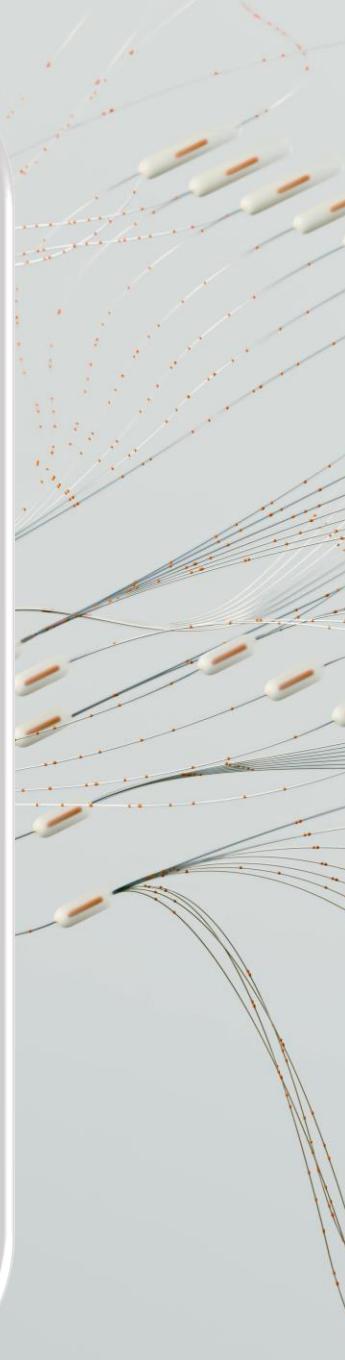
Why Predict?

- Accurate prediction of loan defaults helps in decision making. It aids in the allocation of resources and funds.
- Enables proactive measures to minimize defaults. Improves overall financial stability for companies and financial institutions.
- Lending Club uses machine learning to assess creditworthiness. This approach is both accurate and inclusive.
- Understanding prediction value is crucial for enhancing credit assessment and reducing financial risks.

Machine Learning Model to Predict Loan Defaults

A Objective

- Develop a machine learning model to predict loan defaults on Lending Club. Utilize borrower and loan data for analysis.
- Identify factors influencing loan repayment. Improve the accuracy and inclusivity of the creditworthiness assessment process.
 - Machine learning models can enhance predictive capabilities and offer better risk management insights.
- A robust predictive model can lead to smarter lending decisions and reduced financial losses.



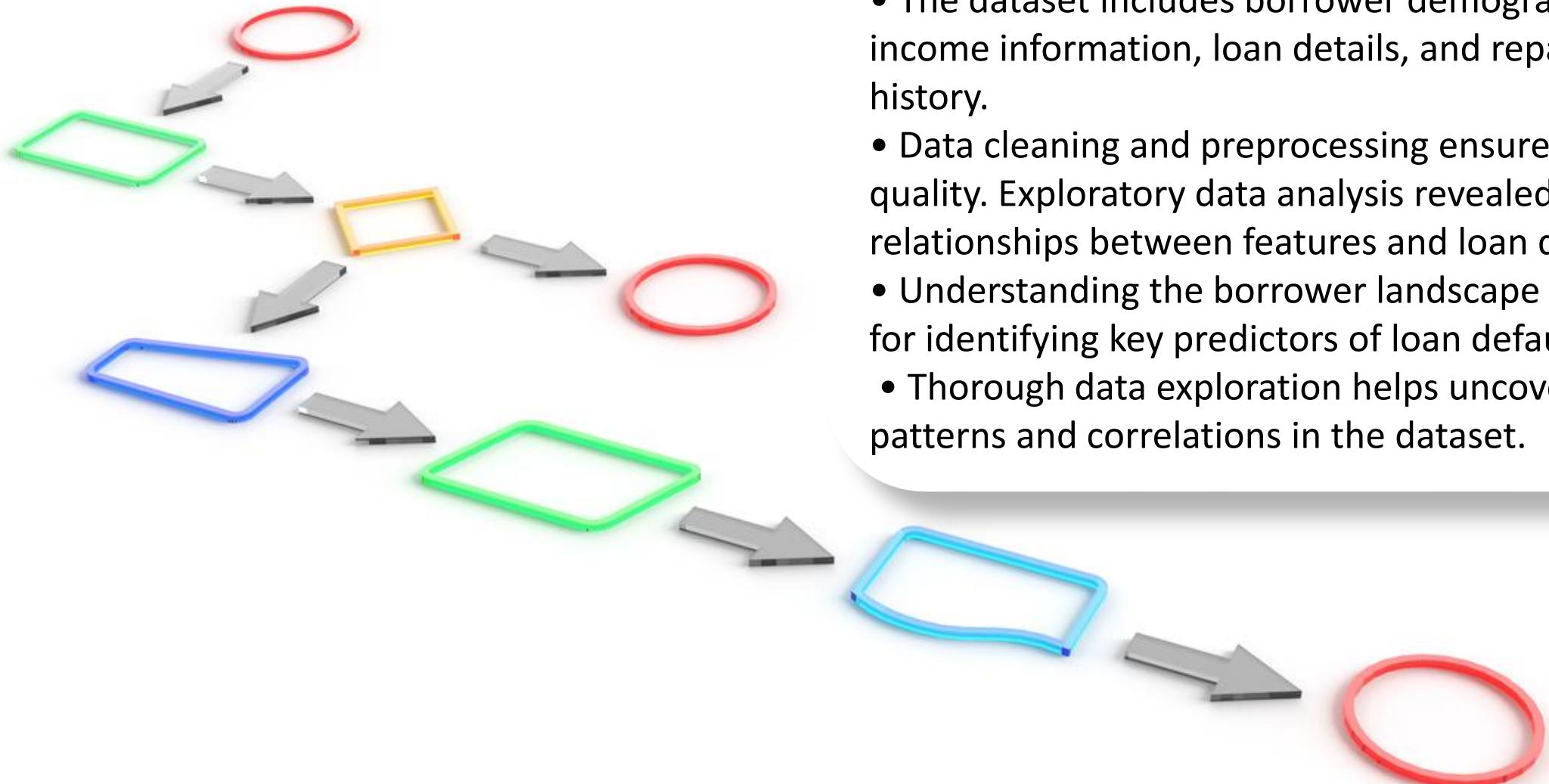
Unveiling the Data:

- Public Lending Club dataset on Kaggle was used for this project. The dataset contains information on borrowers, loans, and repayment history.
 - 10,000 observations with 55 variables provided valuable insights. The data was crucial in developing the predictive model.
 - The dataset offered a comprehensive overview of lending patterns and borrower behavior.
 - Analyzing this dataset is the foundation for building an accurate and reliable prediction model.



Data Exploration:

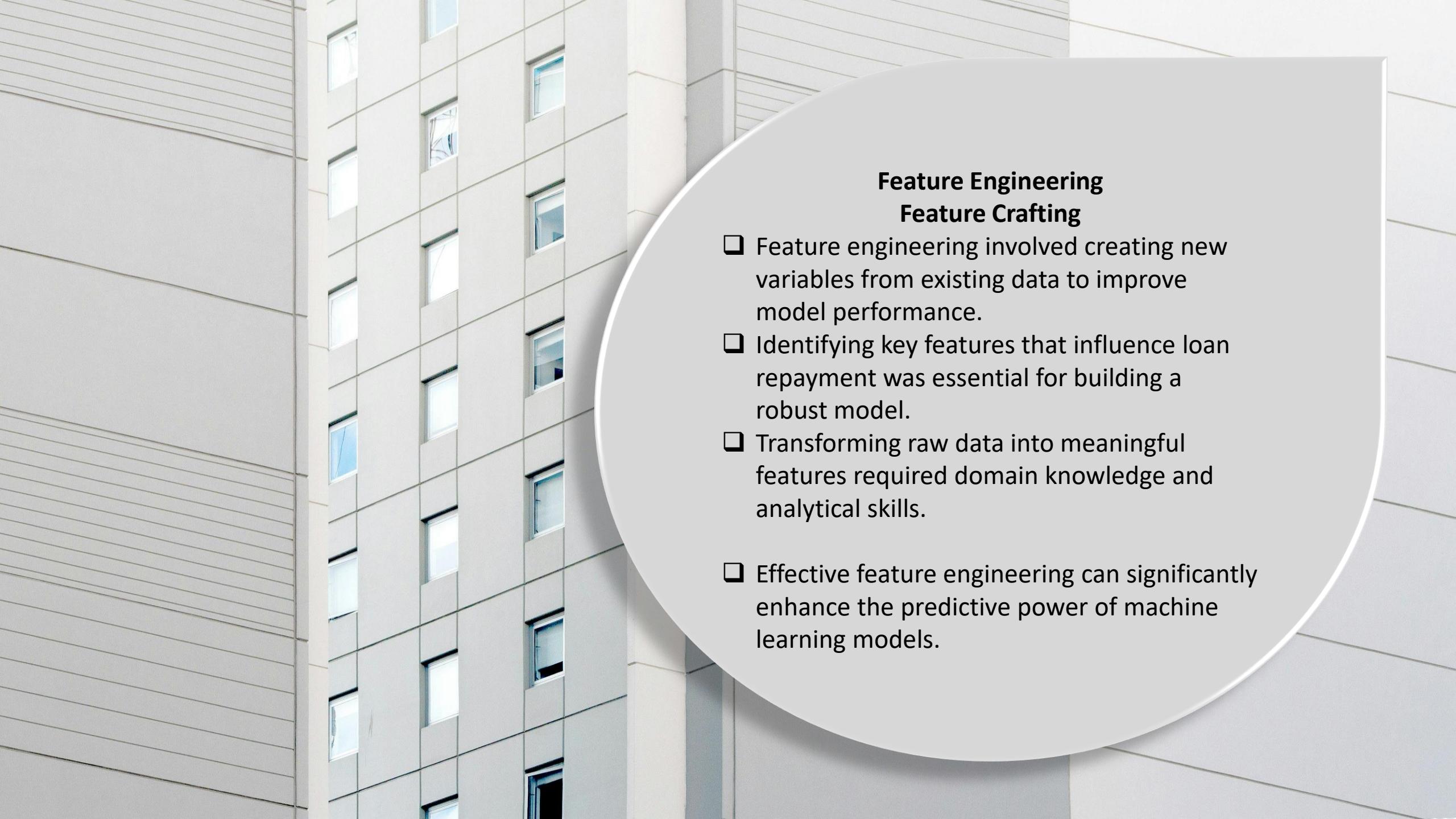
- The dataset includes borrower demographics, income information, loan details, and repayment history.
- Data cleaning and preprocessing ensured data quality. Exploratory data analysis revealed relationships between features and loan default.
- Understanding the borrower landscape is critical for identifying key predictors of loan default.
- Thorough data exploration helps uncover hidden patterns and correlations in the dataset.



Preprocessing Data:

- *Data collection involved gathering relevant borrower and loan information from the Lending Club dataset.*
- *Data preparation included cleaning, transforming, and structuring the data for analysis. Ensuring data quality was paramount.*
- *Handling missing values, outliers, and inconsistencies was crucial for accurate model training.*
- *Well-prepared data forms the backbone of a reliable and effective machine learning model.*





Feature Engineering

Feature Crafting

- Feature engineering involved creating new variables from existing data to improve model performance.
- Identifying key features that influence loan repayment was essential for building a robust model.
- Transforming raw data into meaningful features required domain knowledge and analytical skills.

- Effective feature engineering can significantly enhance the predictive power of machine learning models.

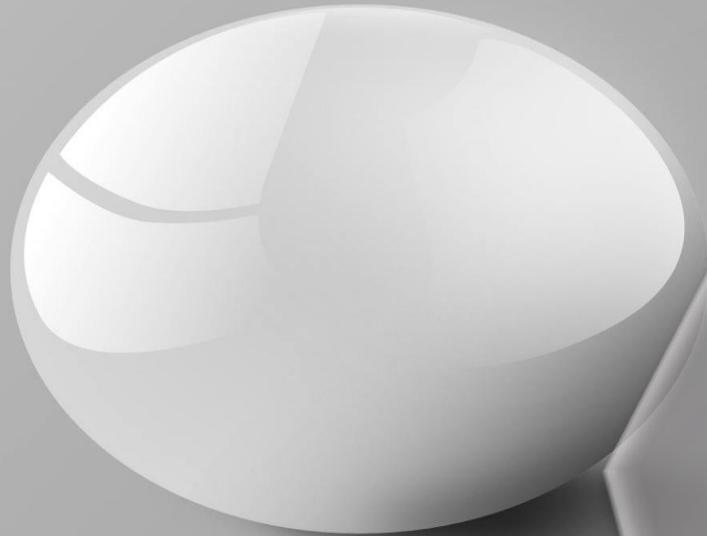
Choosing the Right Algorithm

- Different algorithms have varying strengths and weaknesses. Common choices include logistic regression, decision trees, and SVM.
- Selecting the right algorithm depends on the nature of the data and the specific prediction task.
- Model evaluation and comparison help in choosing the most suitable algorithm for loan default prediction.
- An appropriate algorithm ensures accurate and reliable predictions, reducing financial risks.

Validation:

Model Validation

- Validation involves splitting the data into training and test sets to evaluate model performance.
- Cross-validation techniques ensure that the model generalizes well to unseen data.



- Performance metrics like accuracy, precision, recall, and F1 score assess model effectiveness.

- Proper validation is essential for building a reliable and robust prediction model.

Deployment:

- Deployment involves implementing the model in a real-world setting, making predictions on new loan applications.
- Monitoring model performance ensures it remains accurate and reliable over time.
 - Updating the model with new data helps maintain its predictive power and relevance.
- Successful deployment leads to actionable insights, minimizing loan defaults and financial risks.



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