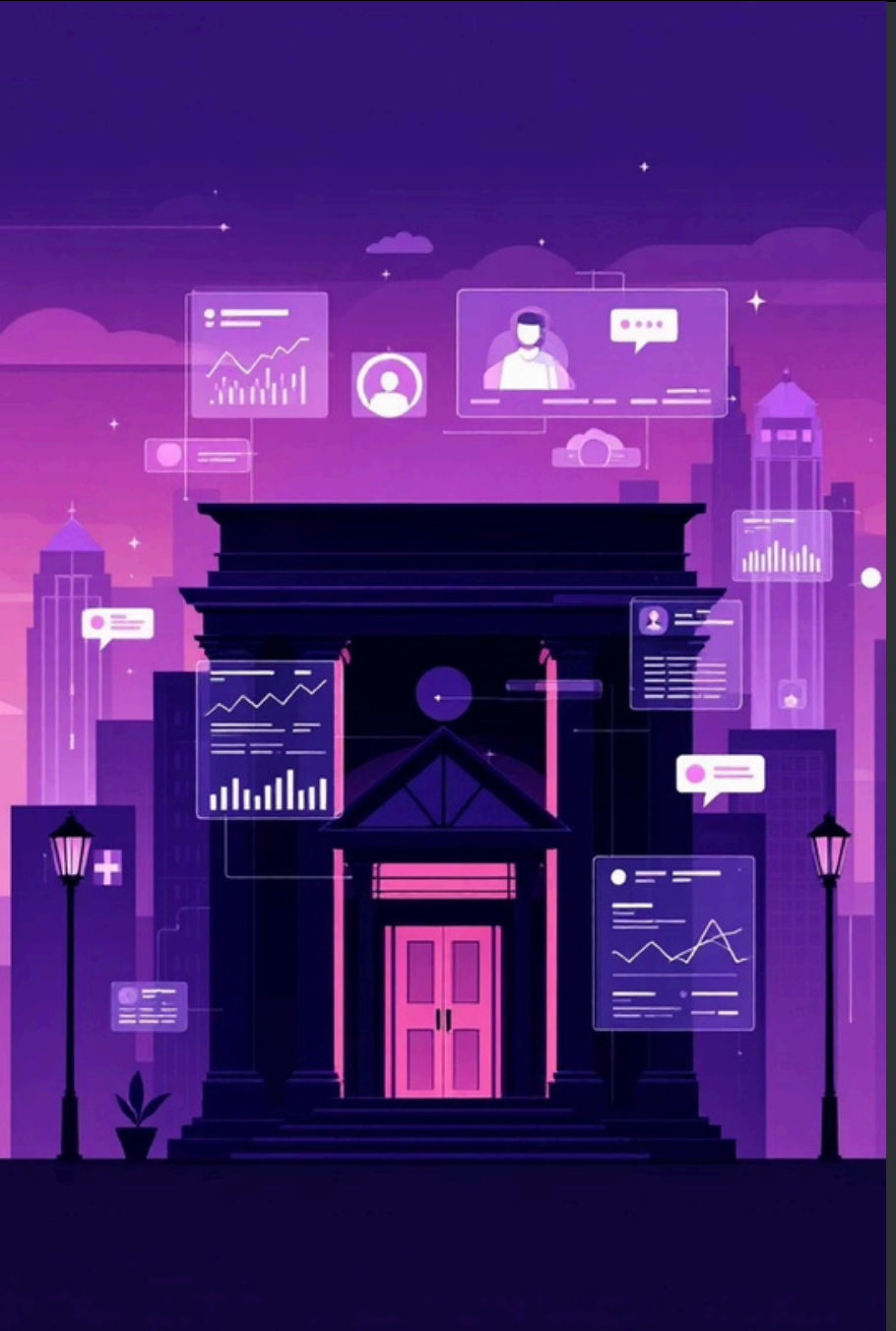

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Credit Default Prediction Project Overview

Thisprojectfocuses onpredictingwhichcustomers are likely to default on their loans.

- Bank needs to predict which customers are likely to default on their loans.
- Target variable default: 1 = will repay (safe), 0 = will not repay (risky).
- High-level goal: support better credit risk decisions before issuing loans.

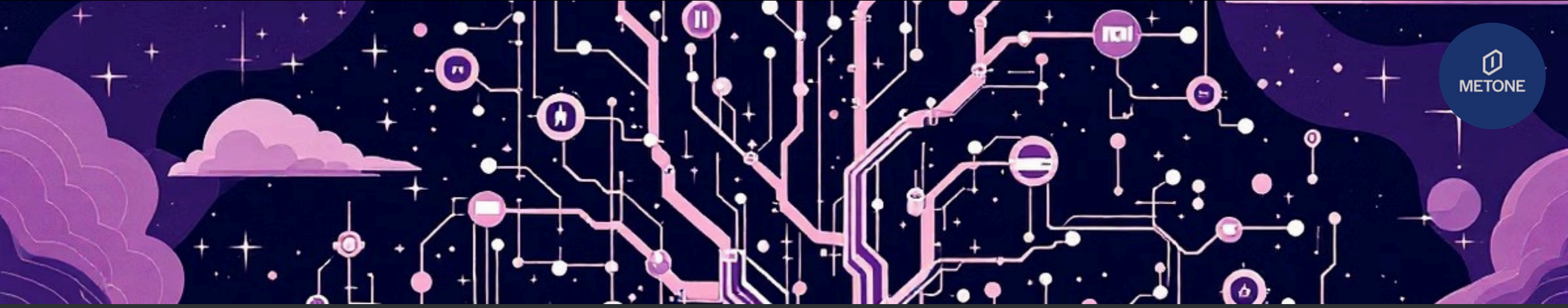
Data and Preprocessing

Ourmodel was built usinga comprehensive datasetderived from multiple sources.

- Data comes from multiple source tables (e.g., application metadata, demographics, credit history, loan details, financial ratios, geographic data).
- Final dataset size: around 90K customers and dozens of features.

Key Preprocessing Steps:

- Merging tables on a common customer key.
- Removing ID / low-information columns.
- Handling missing values and encoding categorical variables.
- Splitting into train (80%) and test (20%) using stratified split.



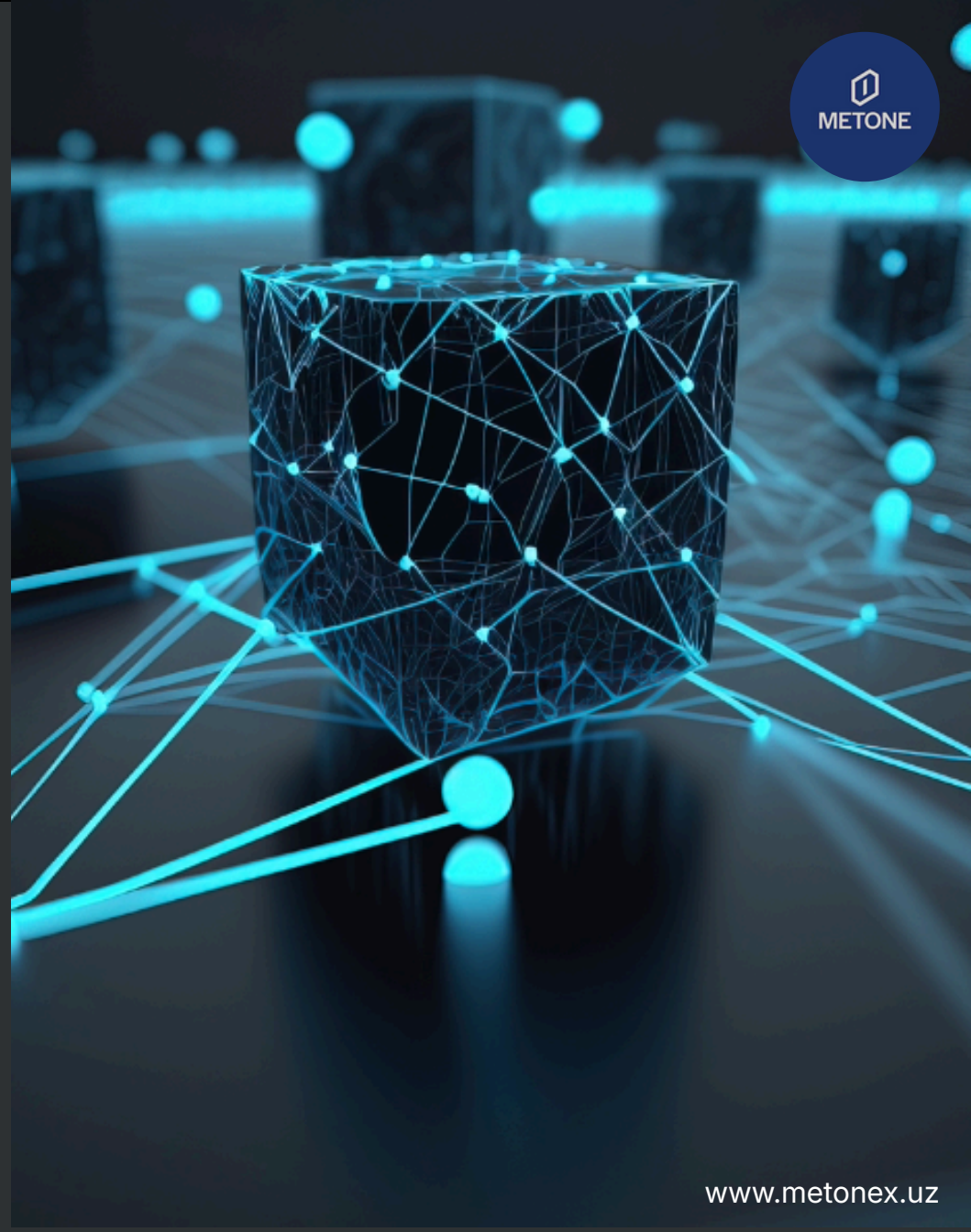
Modelling Approach and Model Choice

We utilized LightGBM for it sefficiency and performance in binary classification tasks.

- Used LightGBM for binary classification.
- Well-suited for large tabular data with mixed numeric and categorical features.
- Handles class imbalance using class weights.
- Efficient training and strong performance (good ROC3AUC).

Model Usage in Practice

- Trained modelis saved locally (serialized to a file) after training
- For new customer data, the same preprocessing pipeline is applied
- The saved model is loaded and used to predict default probabilities for the new dataset
- Output: for each new customer, we generate a risk score (probability of default) and a predicted class label



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Important Feature Types

The model leverages several key features to assess credit risk effectively.

Credit Score

A primary indicator of creditworthiness.

Utilization

Ratio of credit used to credit available.

Loan Amount

The total value of the loan requested.

Debt-to-Income Ratio

Measures ability to manage monthly payments.

Age

Demographic factor influencing credit behavior.

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Results and Key Takeaways

Our model demonstrates strong predictive capabilities on the test set.

81.2%
AUC

On the test set, indicating good discrimination.

90%
Accuracy

Overall correct predictions.

- Threshold tuning to balance precision/recall for risky vs safe customers.
- Generated final predictions for all customers (probability of default + predicted class).

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Conclusion and Next Steps

The credit default prediction model offers significant value,with avenues for further enhancement.

01

Enhanced Risk Assessment

The model provides a robust framework for identifying potential loan defaults, leading to more informed lending decisions.

02

Improved Portfolio Quality

By reducing losses from defaults, the bank can significantly improve the overall health and profitability of its loan por tfolio.

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Thank You

We are confident that this credit default prediction model will be a valuable asset in managing financial risk.

Questions?

www.metonex.uz