



The Risk of HELOC

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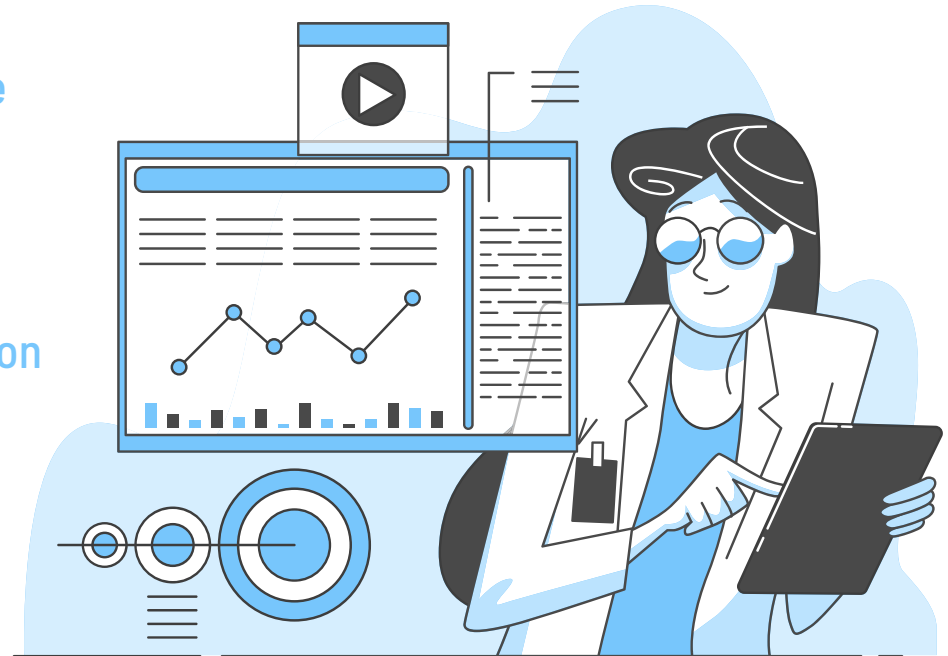
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Technical Proficiency



01

Identify the level of technical proficiency that is expected of the target audience.

02

Consider the potential limitations or challenges that the target audience might face.

03

Determine the appropriate level of technical complexity for the interface.

04

Consider providing training or support resources for the target audience to improve their technical proficiency.

Predictive Model – Boosting

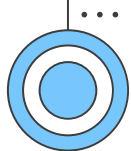
The three best performing models

	Accuracy	Recall	Precision	F1	Final Score
Boosting	73.55%	75.29%	75.07%	75.18%	74.39%
LDA	73.04%	75.48%	74.28%	74.87%	74.14%
Log-Reg	72.89%	74.90%	74.34%	74.62%	73.84%

Final Score = 50% * Accuracy + 30% * Recall + 20% * F1

Design Considerations

- Target user
 - Sales representatives with **2-3 years** experience
- User Background
 - Basic computer efficiency **without** any coding background
 - Basic statistic knowledge
 - Intermediate financial knowledge



Interactive Interface

×

Parameters

Net Fraction Revolving Burden

100

External Risk Estimate

0

Average Months in File

0

Max Delq/Public Records Last 12 Months

6.00

0.00 12.00

Number Bank/Natl Trades with high utilization ratio

10.00

0.00 20.00

Submit

HELOC Risk Performance Predictor

This predictor is designed to assess the credit risk of a loan borrower based on their home equity line of credit. By inputting the required parameters, the predictor generates the predicted risk performance along with the corresponding probability of the result. Additionally, a bar chart displaying the feature importance of the predictor's model is provided below the result for reference.

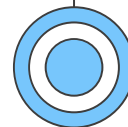
To initialize the predictor, please enter the required parameters in the sidebar and click 'Submit'.

Predicted Result

The predicted loan borrower risk performance is bad with a probability of 0.52. (Prob. of good: 0.48)

Feature importance of the model

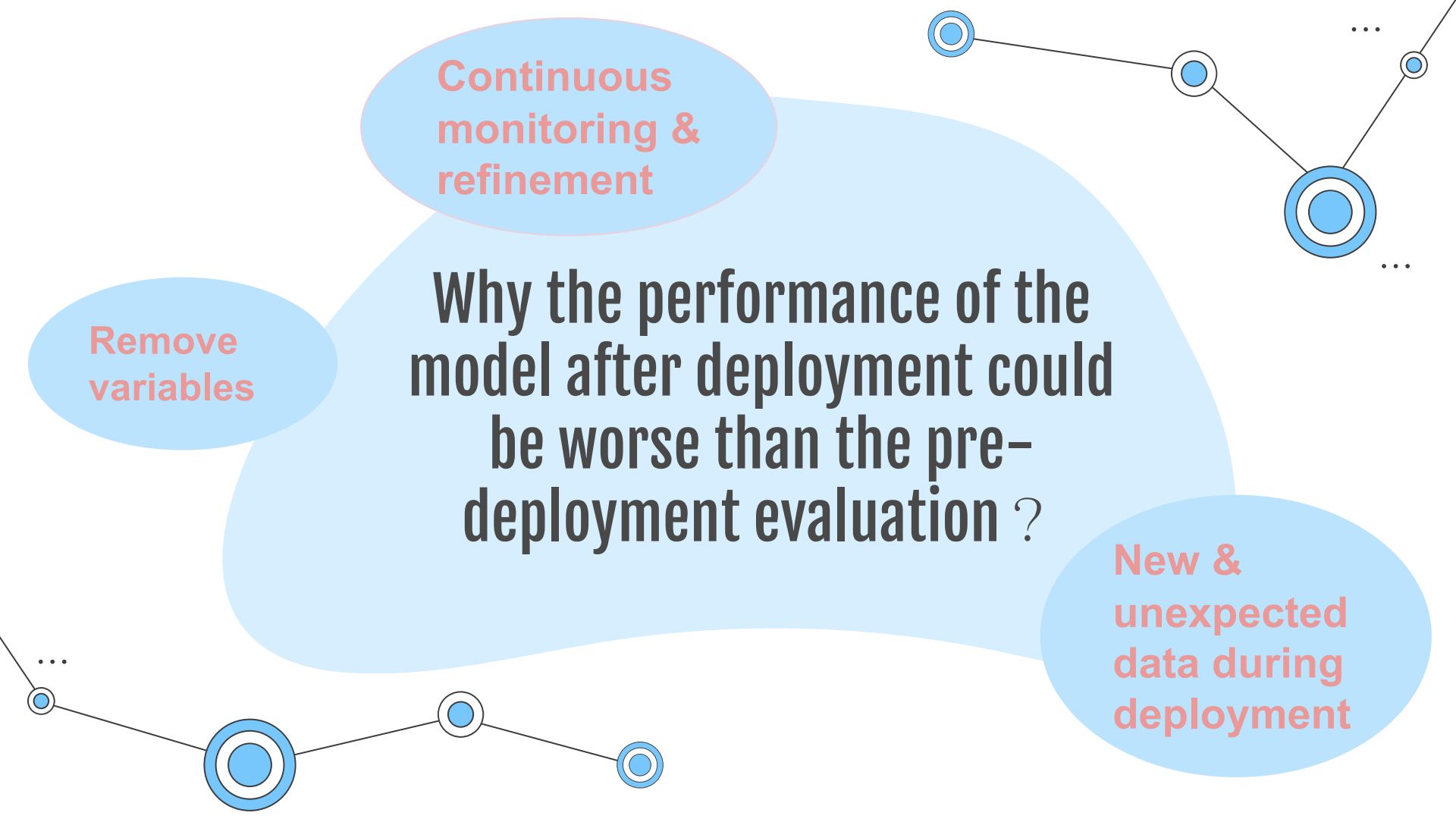
Feature	Importance
AverageMInFile	0.40
NetFractionRevolvingBurden	0.25
ExternalRiskEstimate	0.18
NumBank2NatlTradesWHighUtilization	0.10
MaxDelq2PublicRecLast12M	0.05



The Limitations of Our Solution



- The predictive model is based on historical data and may not be fully accurate in predicting credit risk in new situations or for new borrowers.
- The model may be biased against certain groups of borrowers, such as those with limited credit history or from certain demographics.



**Continuous
monitoring &
refinement**

**Remove
variables**

**Why the performance of the
model after deployment could
be worse than the pre-
deployment evaluation ?**

**New &
unexpected
data during
deployment**

Conclusion

Developed a predictive model and an interactive interface for evaluating the credit risk of HELOC applications.

Compared different models and found that Boosting had the highest performance in predicting credit risk.

Identified limitations and challenges of the solution, such as potential bias in the data and the need for ongoing monitoring and refinement.

