

Bank Loans

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The Team



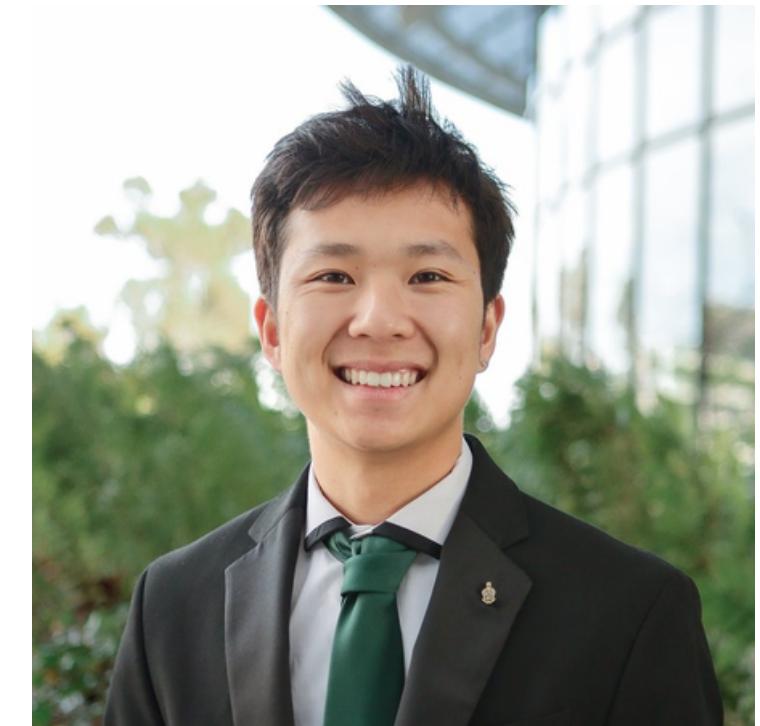
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Computer Science
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Computer Science
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Problem Statement

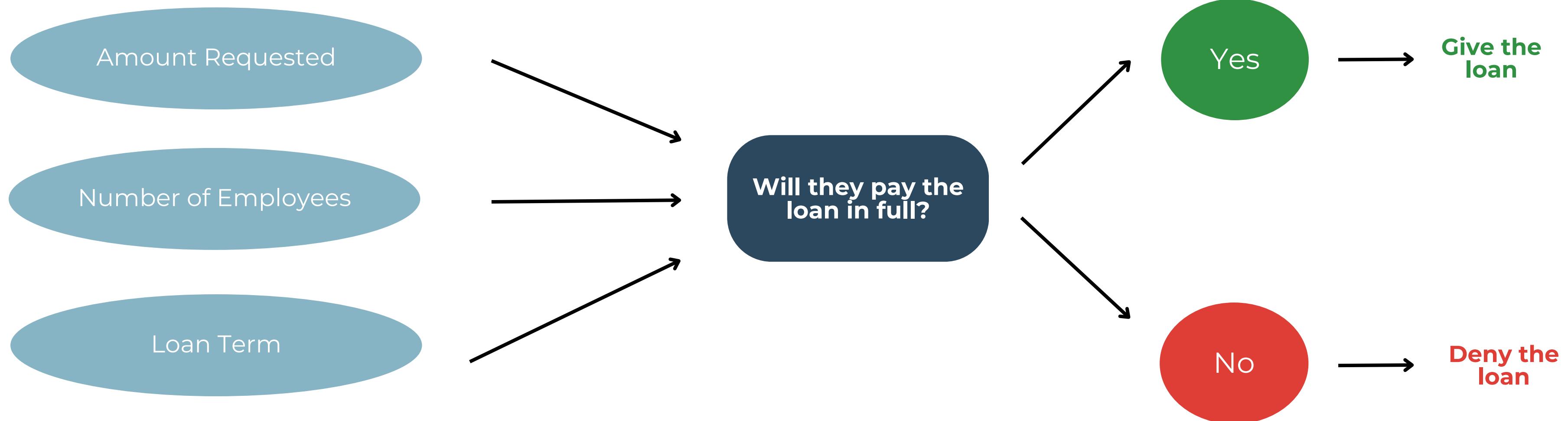
How can banks **leverage our predictive model** to maximize profits and minimize losses, while developing strategies to **further optimize** financial outcomes based on the model's insights?

Our Predictive Model

How the Model Works

(Simple Example)

Business Loan Features



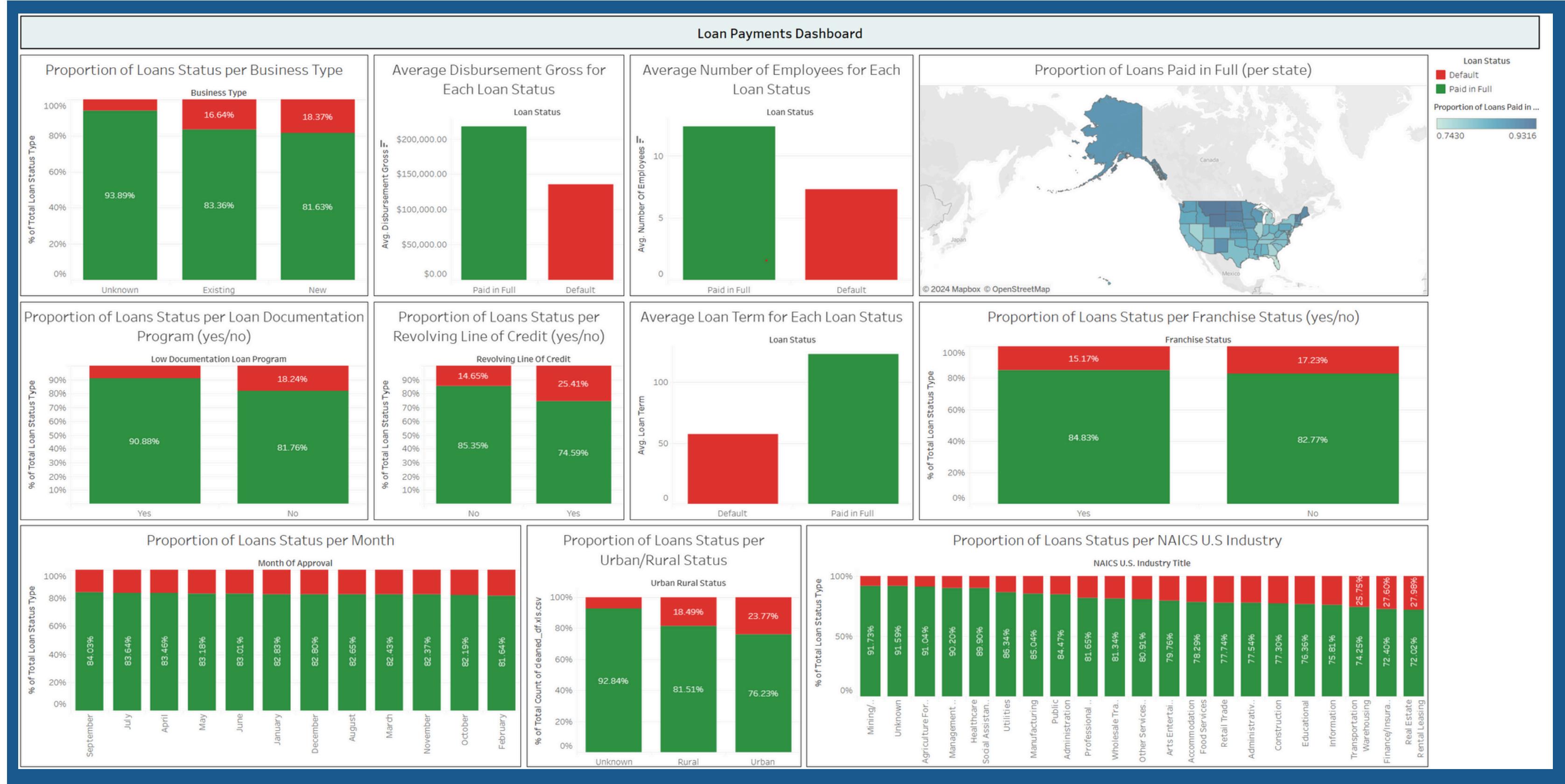
More likely to pay in full

- **Business Type:** Unknown
- **Amount of Money Requested:** High
 - Around \$200,000 +
- **Average Number of Employees:** Low
 - Around 12+ Employees
- **Loan Documentation Program?** Yes
- **Revolving Line of Credit?** No
- **Average Loan Term:** High
 - Around 100+ months
- **Franchise?** Yes
- **Area:** Unknown or Rural

More likely to default

- **Business Type:** New
- **Amount of Money Requested:** Default
 - Around \$140,000 or less
- **Average Number of Employees:** Low
 - Around 6 or less Employees
- **Loan Documentation Program?** No
- **Revolving Line of Credit?** Yes
- **Average Loan Term:** Low
 - Around 55 months or less
- **Franchise?** No
- **Area:** Urban

Dashboard



Probability Sheet

This resource is designed specifically for our **stakeholders**.

It provides insights into businesses ranked by the **probability** of paying back in full **based on our model**.

Name	Loan Count	PIF Count	Success Rate	Percentage of Success (Rounded)	Net Profit	PIF Likelihood
HOLIDAY INN EXPRESS	216	215	0.9953703703703703	100.00%	11062789.75	Very High
HAMPTON INN	73	73	1	100.00%	3981850.85	Very High
COMFORT SUITES	57	57	1	100.00%	3415404.55	Very High
COUNTRY INN & SUITES	33	33	1	100.00%	1875605	Very High
WINGATE INN	23	23	1	100.00%	1238016.65	Very High
COMFORT INN & SUITES	20	20	1	100.00%	1226950	Very High
HOLIDAY INN EXPRESS HOTEL & SU	17	17	1	100.00%	1032685.35	Very High
P & K SUPPLIES CORPORATION	12	12	1	100.00%	997270	Very High
PRIMROSE SCHOOL	13	13	1	100.00%	960449.65	Very High
HAWTHORN SUITES	11	11	1	100.00%	891020	Very High
HAMPTON INN & SUITES	13	13	1	100.00%	871650	Very High
BEST WESTERN MOTEL	20	20	1	100.00%	858200	Very High
BEST VALUE INN	19	19	1	100.00%	841450	Very High
HOLIDAY INN EXPRESS & SUITES	14	14	1	100.00%	837650	Very High
RED ROOF INN	13	13	1	100.00%	806715	Very High
BAYMONT INN & SUITES	13	13	1	100.00%	793150	Very High
MICROTEL INN	18	18	1	100.00%	778945	Very High
Quest Aircraft Company, L.L.C.	5	5	1	100.00%	766057.25	Very High

Likelihood of Paying Loan in Full Key	
Likelihood	Success Rate
Very High	100% to 90%
High	89% to 80%
Moderate	79% to 60%
Low	59% to 40%
Very Low	39% to 0%



Click to view full spreadsheet

Use this as a reference if one of these businesses ask for a loan in the future.

Bank Strategy





Methodology

1

Segment businesses based on repayment probability from our predictive model

2

Prioritize most important segments to focus on

3

Create strategies for each of these segments

Segments

This segmentation allows for a strategic approach to loan allocation, focusing resources where they are most effective while minimizing potential losses.

Segment 1

Trusted Businesses

≥ 80%

Likelihood of Paying in Full

Extremely high chance
these businesses will
pay in full

Segment 2

Uncertain Businesses

40% - 79%

Likelihood of Paying in Full

Unpredictable and risky group, as
the model is less certain of
repayment or default.

Segment 3

Unreliable Businesses

0% - 39%

Likelihood of Paying in Full

Loans are unlikely to be
paid back in full

More priority

Less priority



Trusted Businesses

Goal: Strengthen relationships

Favorable Loans

Offer **lower interest rates** and **flexible repayment schedules** to maintain their loyalty and incentivize future borrowing.

Client Support

Assign dedicated account managers to **provide free personalized assistance** to strengthen relationships, and support business growth.

Priority Processing

Fast-track loan approvals and disbursements for trusted businesses to build trust and ensure smooth transactions.

Larger Loans

Offer increased credit limits and promote higher loans to support larger investments

By cultivating trust and loyalty with these reliable businesses, the bank ensures a consistent revenue stream while fostering long-term partnerships.



Uncertain Businesses

Goal: Balance risk mitigation with loan offers

Partial Loan Approvals

Start with **smaller loan amounts**, increasing over time as repayment reliability is demonstrated, reducing initial risk.

Incentivize Payments

Offer interest discounts or fee waivers for timely payments to **encourage** responsible borrowing behavior.

Close Monitoring

Conduct regular financial reviews and check-ins to identify and address repayment challenges early, preventing defaults.

Financial Guidance

Provide tailored advice or access to bank resources to help businesses manage cash flow and improve operational efficiency.

These strategies focus on proactive support and tailored terms to help businesses improve their repayment outcomes.



Unreliable Businesses

Goal: Minimize risk and reduce resource allocation

Loan Denial

Decline loan applications outright to avoid financial loss due to expected defaults.

Detailed Feedback

Provide constructive feedback on why the loan was denied, offering guidance on improving their financial health for future applications.

Alternative Solutions

Suggest alternative financial solutions, such as smaller lines of credit or non-loan services, with stricter conditions.

Minimum Engagement

Limit time and resources spent analyzing or engaging with these businesses unless they get closer to meeting loan criteria.

These strategies focus on risk avoidance while offering limited support to guide high-risk default businesses

Conclusion

Benefits

Our predictive model is already a powerful tool for identifying repayment likelihood, significantly boosting profitability. However, this presentation demonstrates **how we can build on the model's foundation** to implement strategic actions, unlocking even greater profit potential by capitalizing on overlooked opportunities and enhancing business outcomes beyond the predictions alone.

