LENDING CLUB:

RISK ASSESSMENT

Orange Group 2: Sally Crouch, Octavio Cortes, Mckayla Lein, Jacob Hyman, Adam Cottrell, Ashwin Balasubramanian

SOME LOANS ARE
RISKIER THAN YOU
THINK.

AGENDA

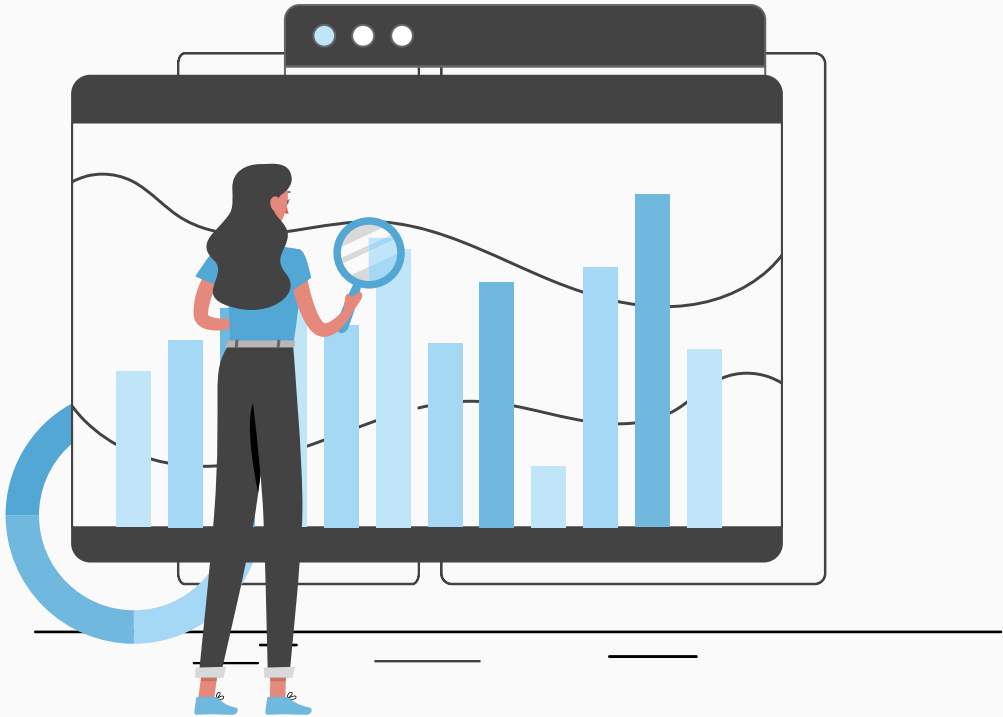
01.
DATA EXPLORATION

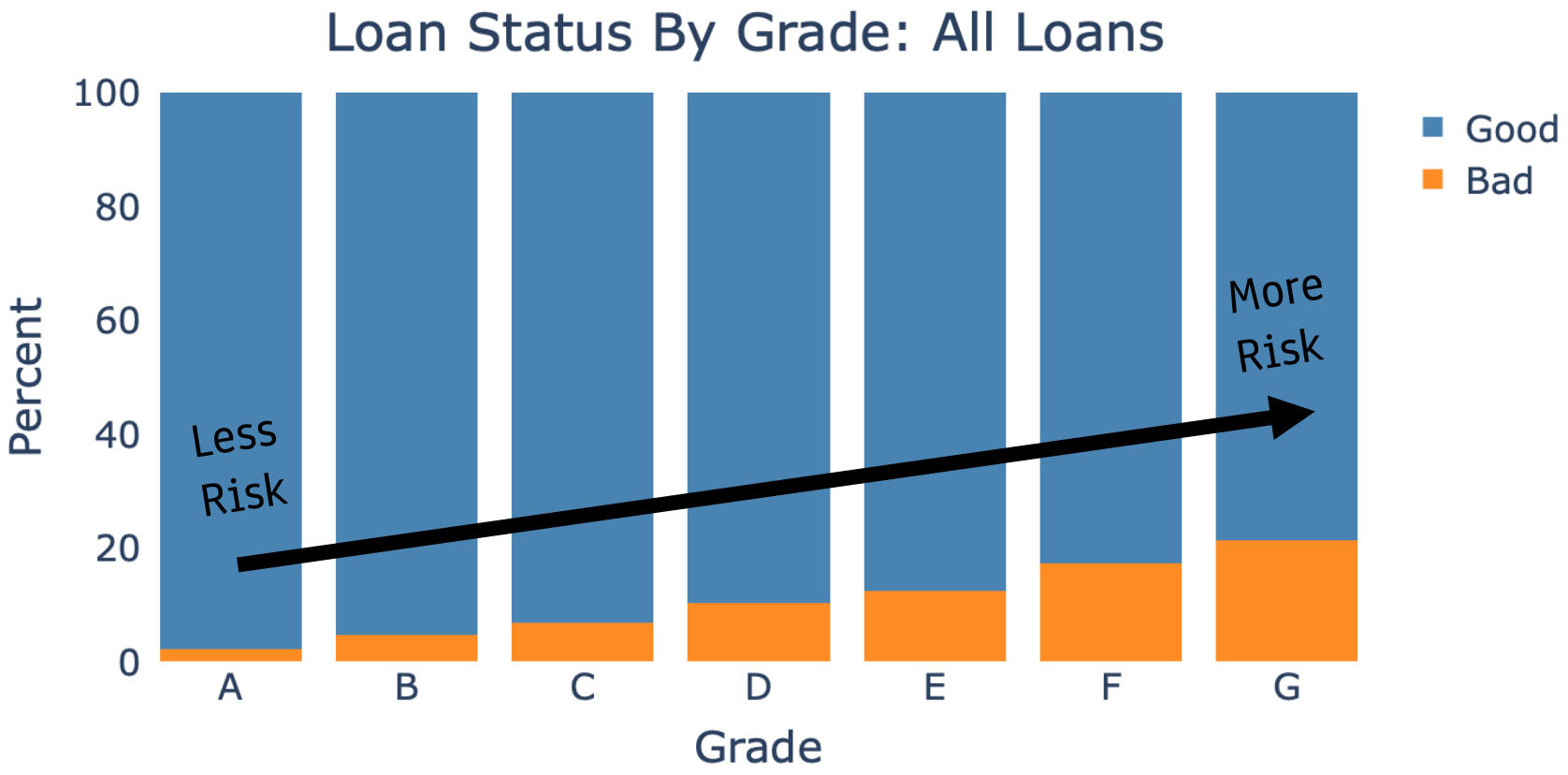
02.
METHODOLOGY

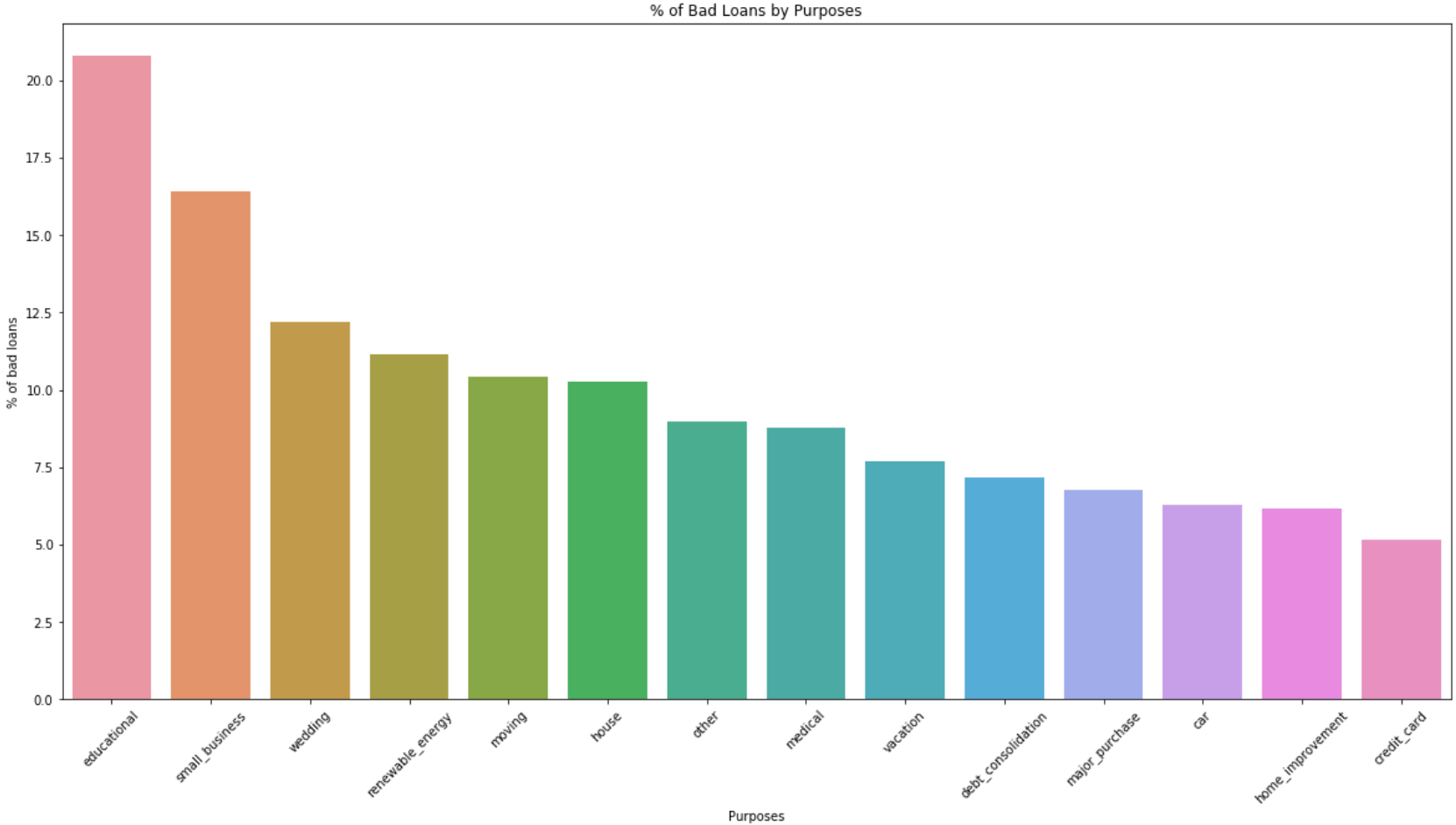
03.
RISK ANALYSIS

04.
KEY TAKEAWAYS

DATA EXPLORATION




Loan Status By Grade: All Loans
100
80
60
40
20
0
Percent
Less Risk
More Risk
Good
Bad
A
B
C
D
E
F
G
Grade


% of Bad Loans by Purposes
% of bad loans
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
educational
small_business
wedding
renewable_energy
moving
house
other
medical
vacation
debt_consolidation
major_purchase
car
home_improvement
credit_card
Purposes

METHODOLOGY

STATUS

GRADES

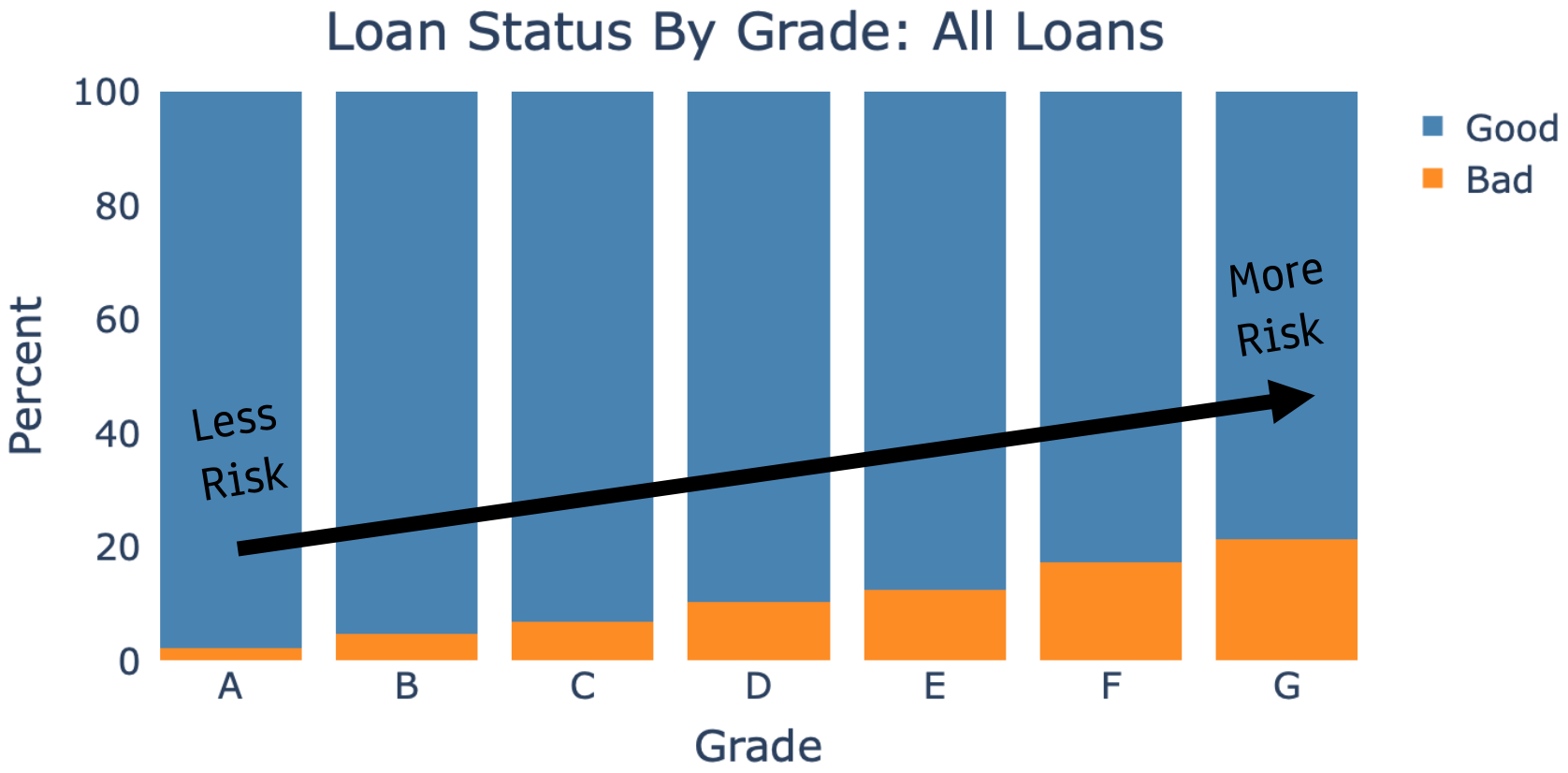
PURPOSES

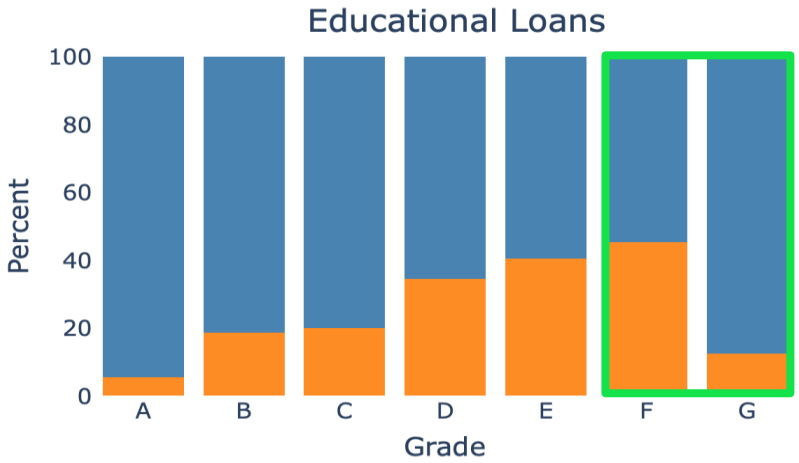
GOOD STATUS VS. BAD STATUS

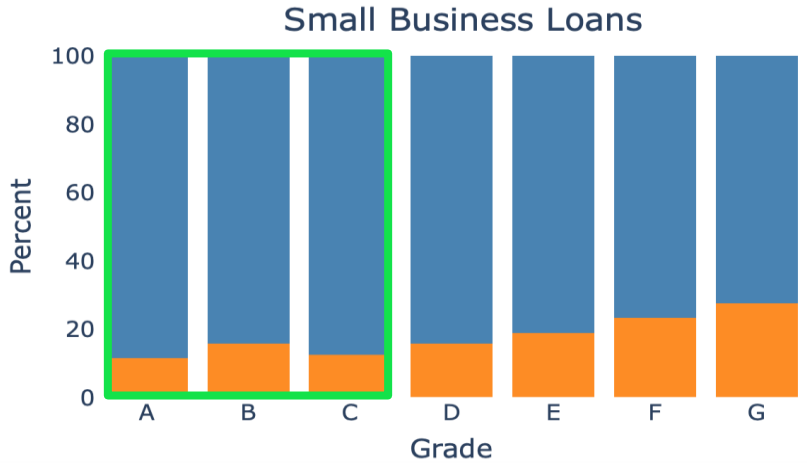
GOOD STATUS VS. BAD STATUS

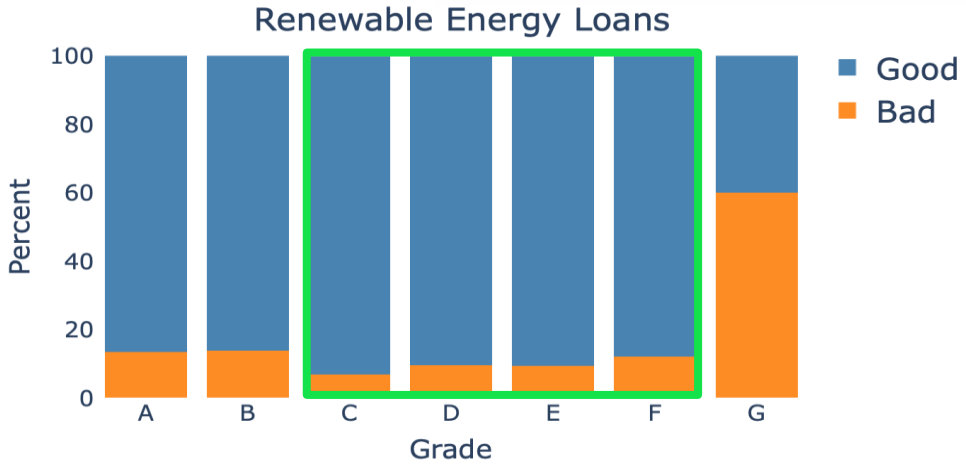
- Fully paid off
- Current
- Grace Period

- Default
- Charged Off
- Late

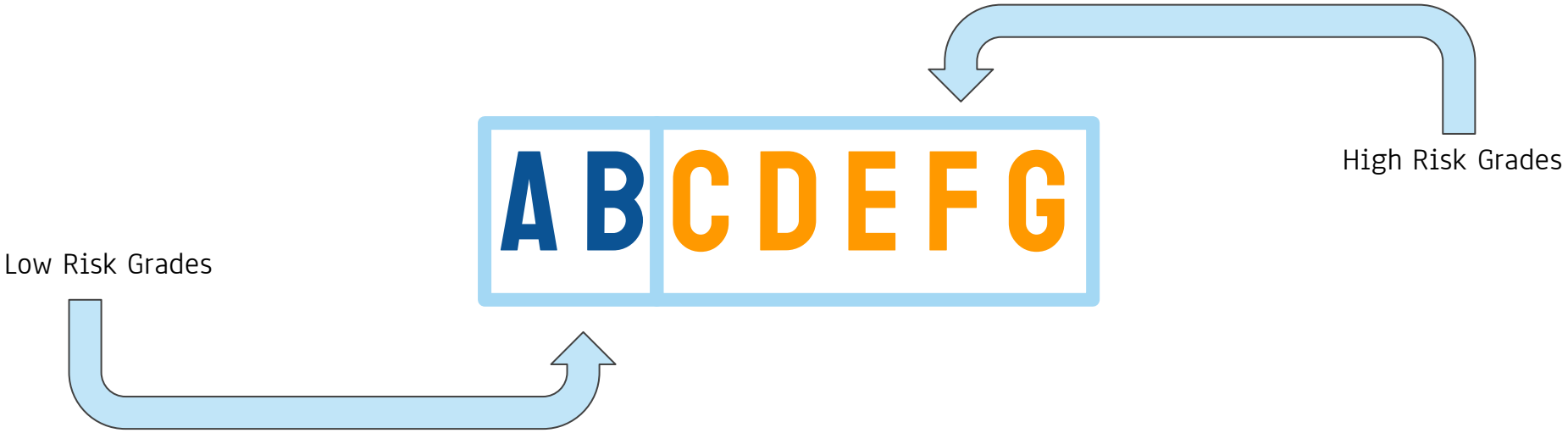

Loan Status By Grade: All Loans
100
80
60
40
20
0
Percent
Less Risk
More Risk
Good
Bad
A
B
C
D
E
F
G
Grade

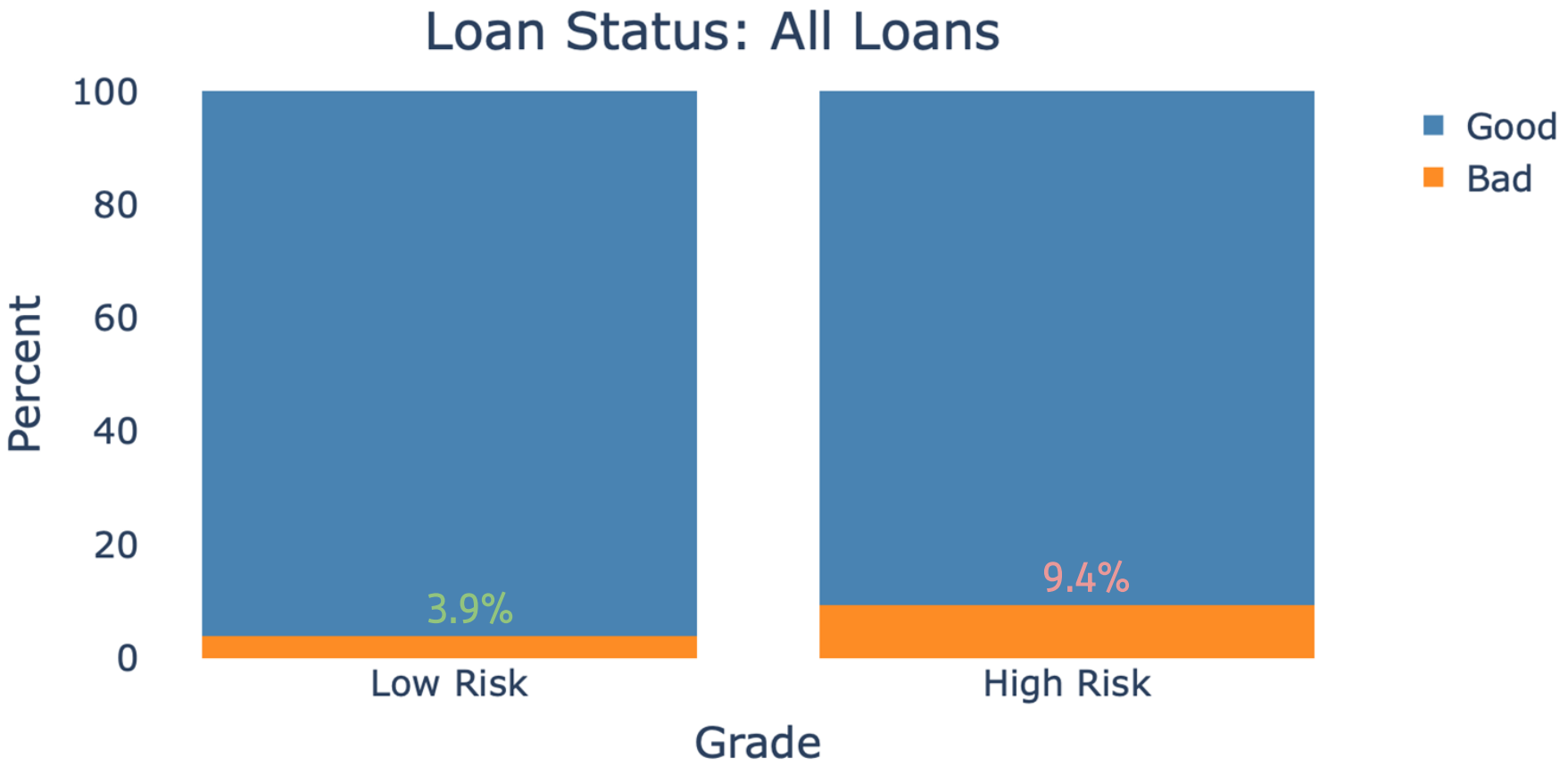

Educational Loans
Percent
100
80
60
40
20
0
A
B
C
D
E
F
G
Grade

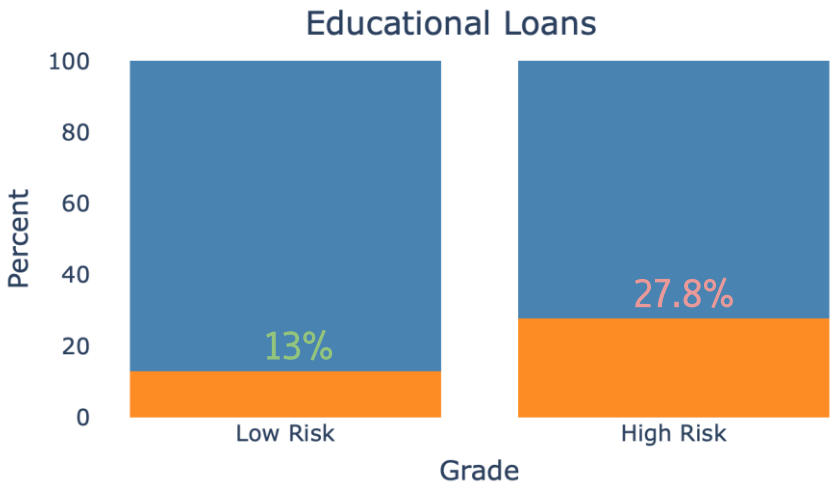

Small Business Loans
Percent
100
80
60
40
20
0
A
B
C
D
E
F
G
Grade

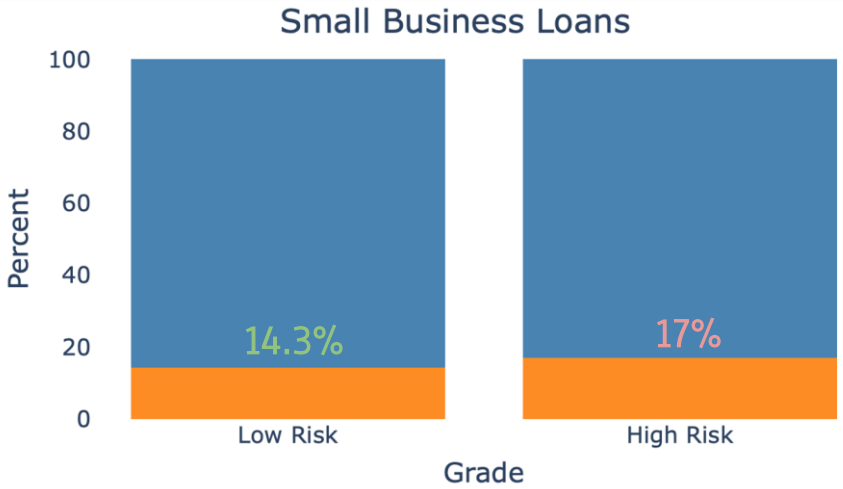

Renewable Energy Loans
Percent
100
80
60
40
20
0
A
B
C
D
E
F
G
Grade
Good
Bad

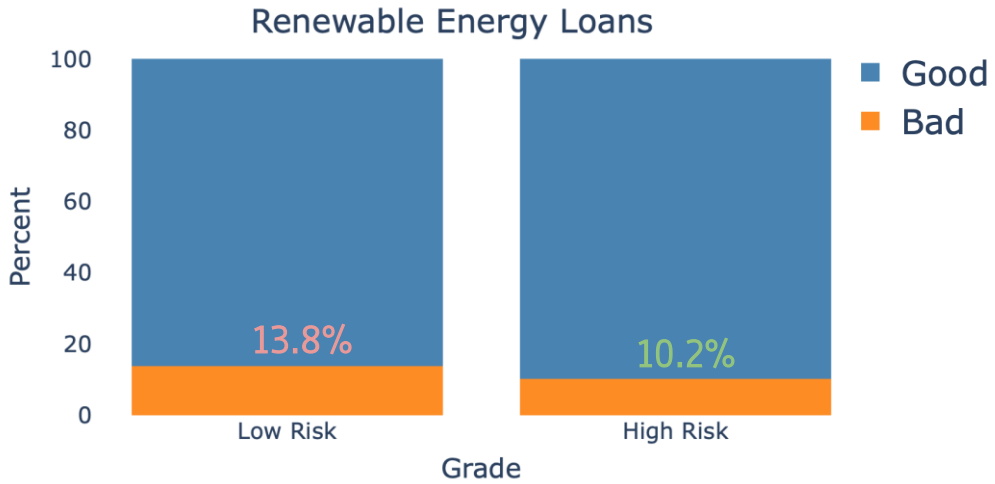
LOAN GRADES



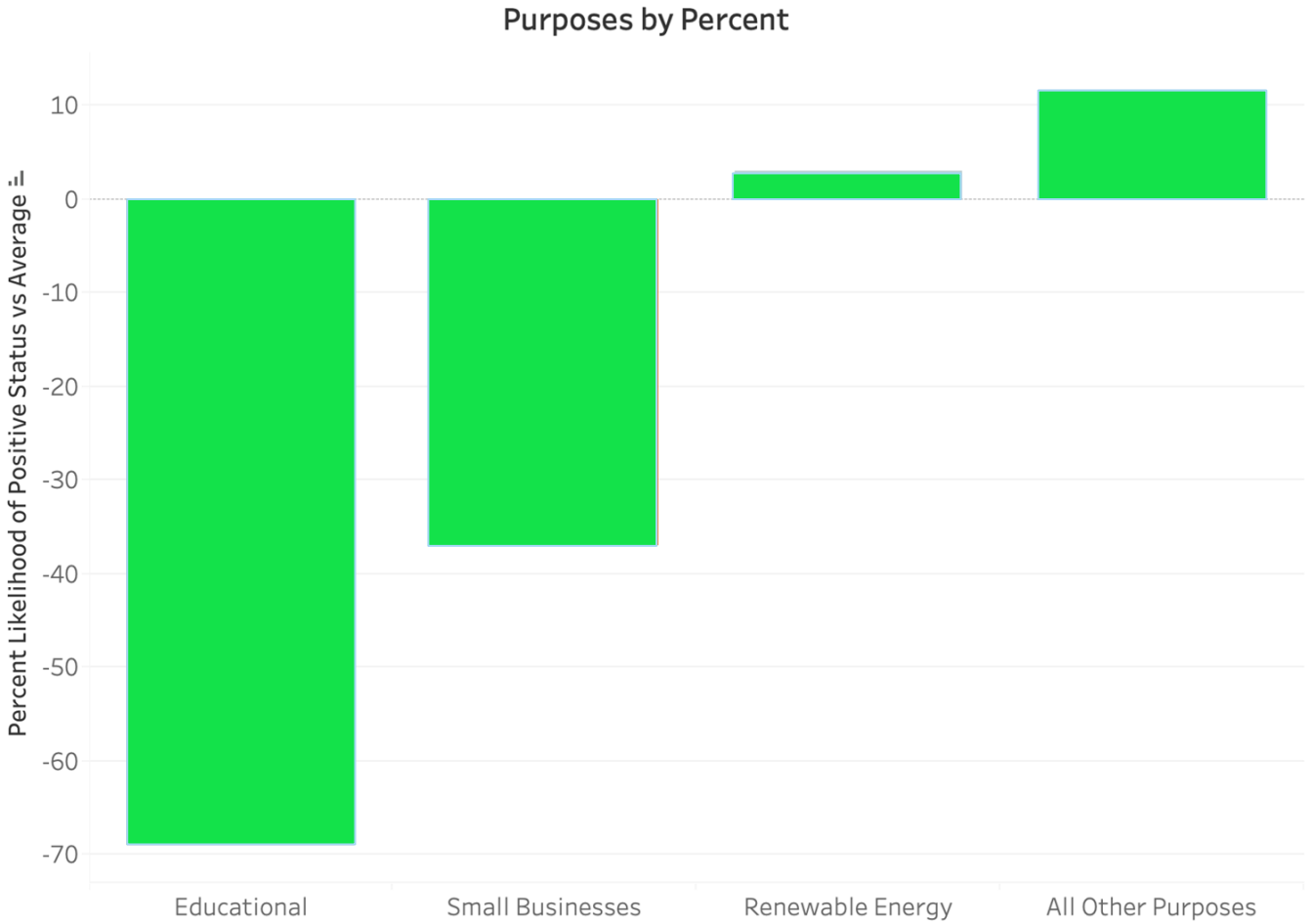

Loan Status: All Loans
100
80
60
40
20
0
Percent
3.9%
9.4%
Low Risk
High Risk
Grade
Good
Bad


Educational Loans
100
80
60
40
20
0
Percent
13%
27.8%
Low Risk
High Risk
Grade

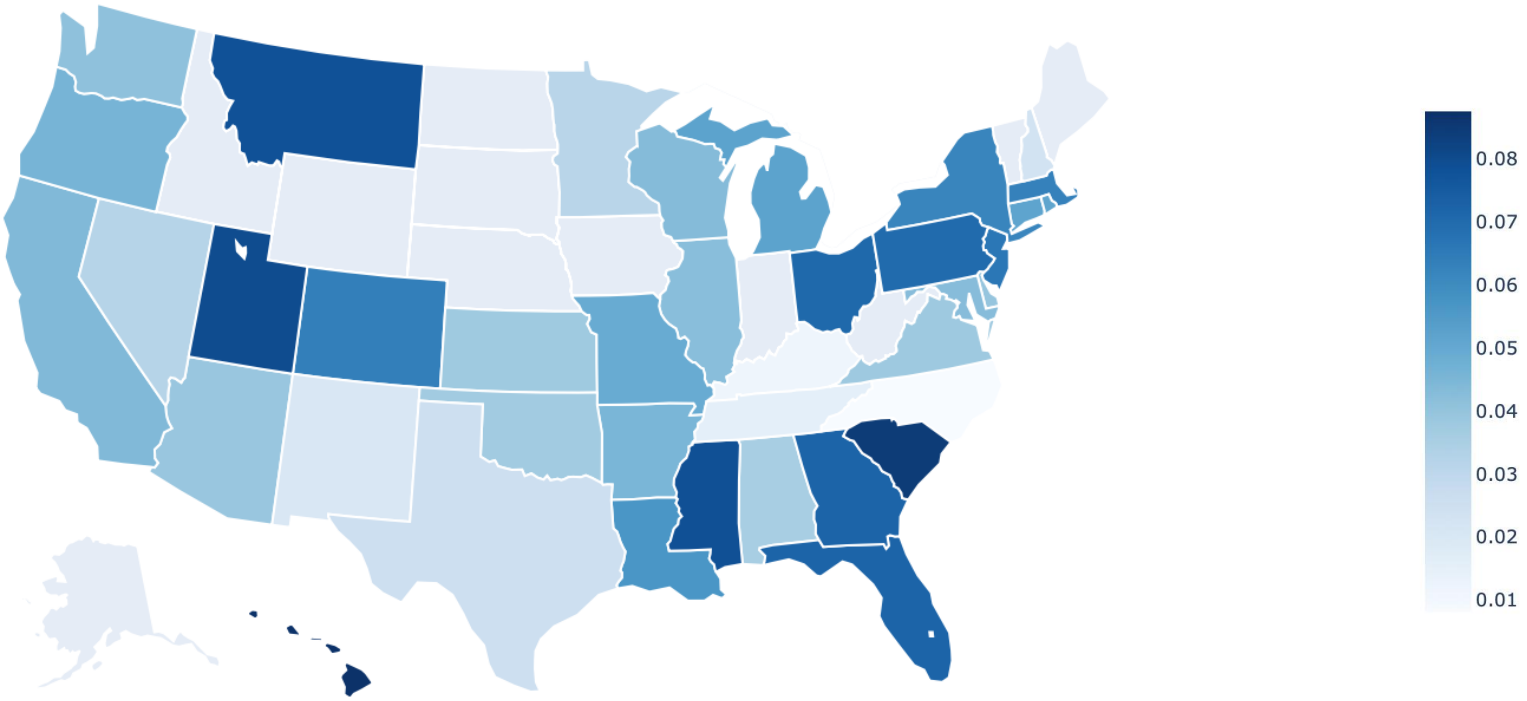

Small Business Loans
100
80
60
40
20
0
Percent
14.3%
17%
Low Risk
High Risk
Grade


Renewable Energy Loans
100
80
60
40
20
0
Percent
13.8%
10.2%
Low Risk
High Risk
Grade
Good
Bad

RISK ANALYSIS


Purposes by Percent
Percent Likelihood of Positive Status vs Average
10
0
-10
-20
-30
-40
-50
-60
-70
Educational
Small Businesses
Renewable Energy
All Other Purposes

PERCENT OF EDUCATIONAL LOANS BY STATE



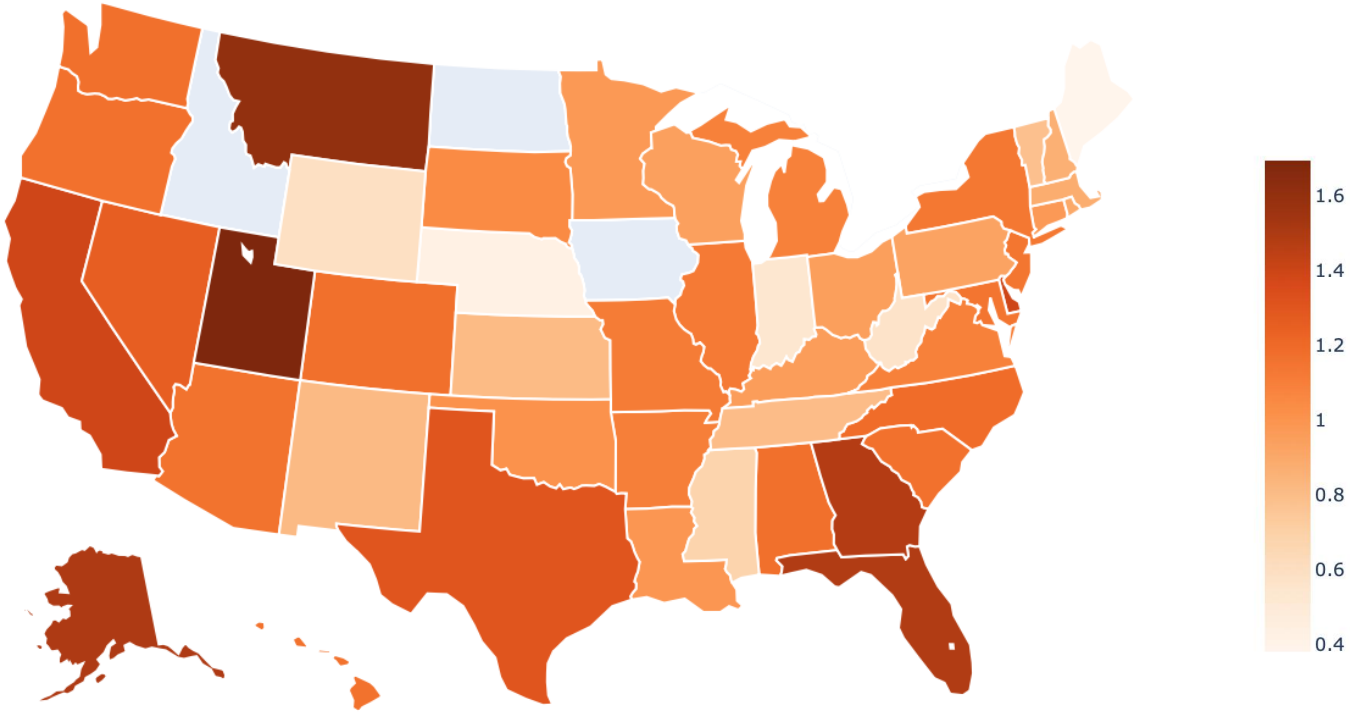
GRADES VS OUR MODEL

Positive or negative status predicted by…	C stat
Grades	0.68
Our Model	0.65

PREDICTORS

Variable	Increased Odds of Payback
1 less credit inquiry in last 6 months	1.24
Employed longer than 10 yrs	2.212

PERCENT OF SMALL BUSINESS LOANS BY STATE



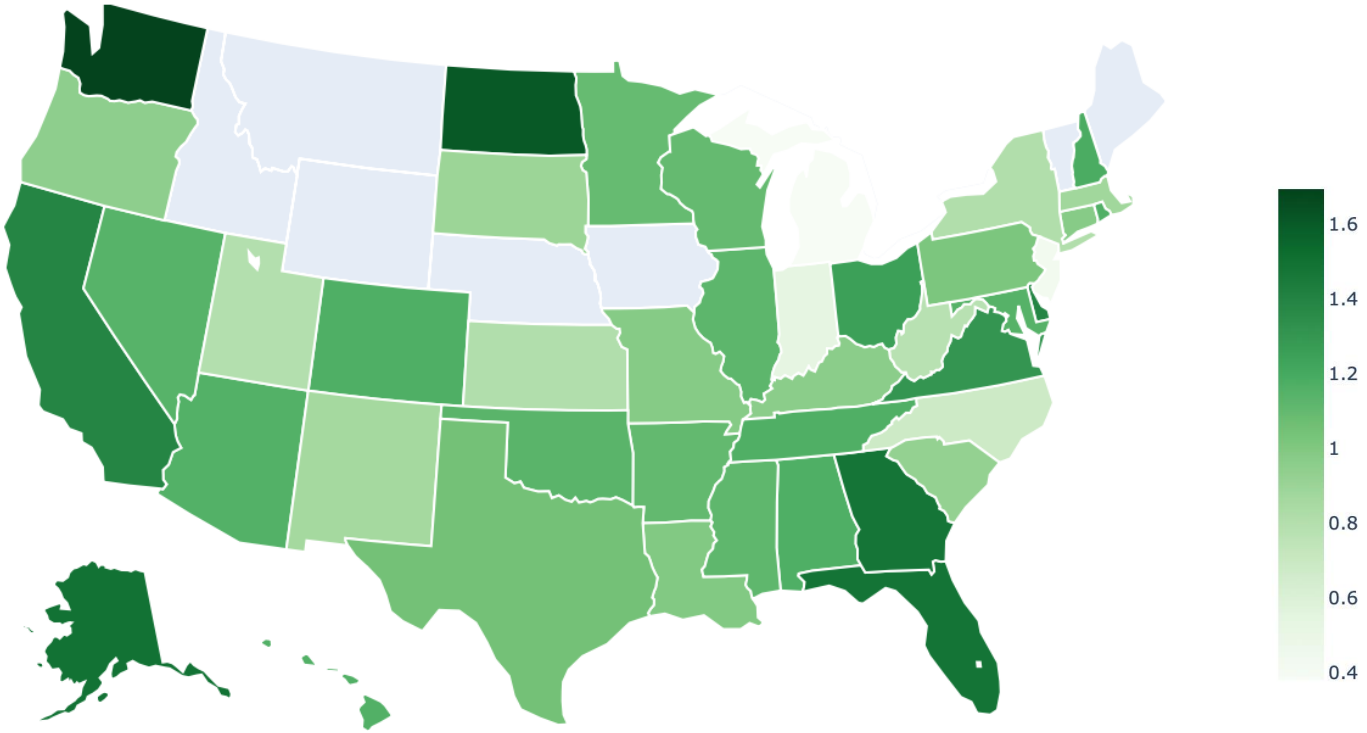
GRADES VS OUR MODEL

Positive or negative status predicted by…	C stat
Grades	0.52
Our Model	0.62

PREDICTORS

Variable	Increased Odds of Payback
Employed longer than 10yrs	1.263
Initial listing status = whole	2.247
1 less credit inquiry in last 6 months	1.23
1 less Public record	1.164
1% less Revolving credit line utilization rate	1.006

PERCENT OF RENEWABLE ENERGY LOANS BY STATE



GRADES VS OUR MODEL

Positive or negative status predicted by…	C stat
Grades	0.56
Our Model	0.62

Predictors:

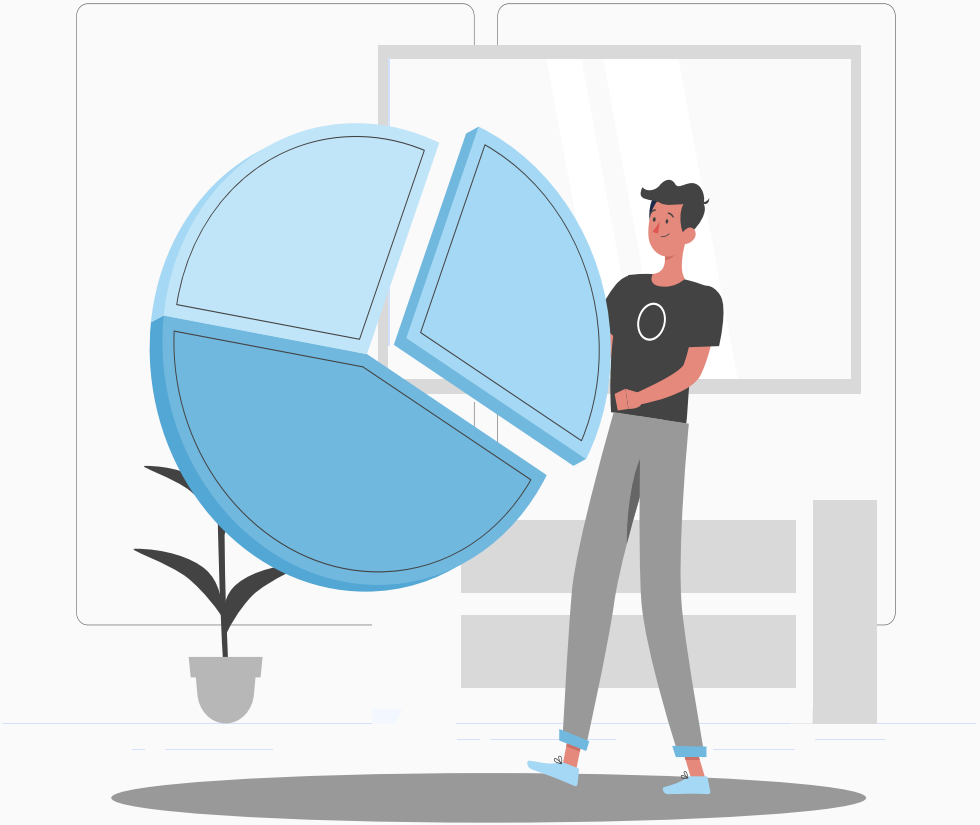
Employment Length ▪ Term ▪ Inquiries in the Last 6mo ▪ Loan Amount ▪ Log of Annual Income ▪

Log of Revolving Balances ▪ Utilization of Revolving Credit

PREDICTORS

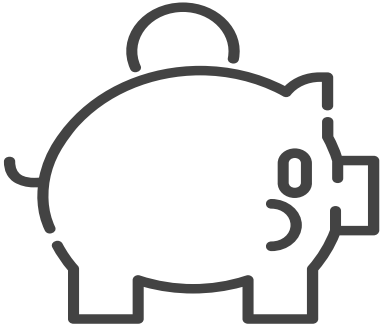
Variable	Increased Odds of Payback
~3-fold increase in income	2.1
Employed Longer than 10yrs	2.0
36mo vs 60mo	1.6
1 less credit inquiry in 6mo	1.3
~3-fold increase in revolving balances	1.3
10% less credit utilization	1.2
Loan lessened by $1000	1.1

KEY TAKEAWAYS



LOAN GRADES INACCURATE FOR...

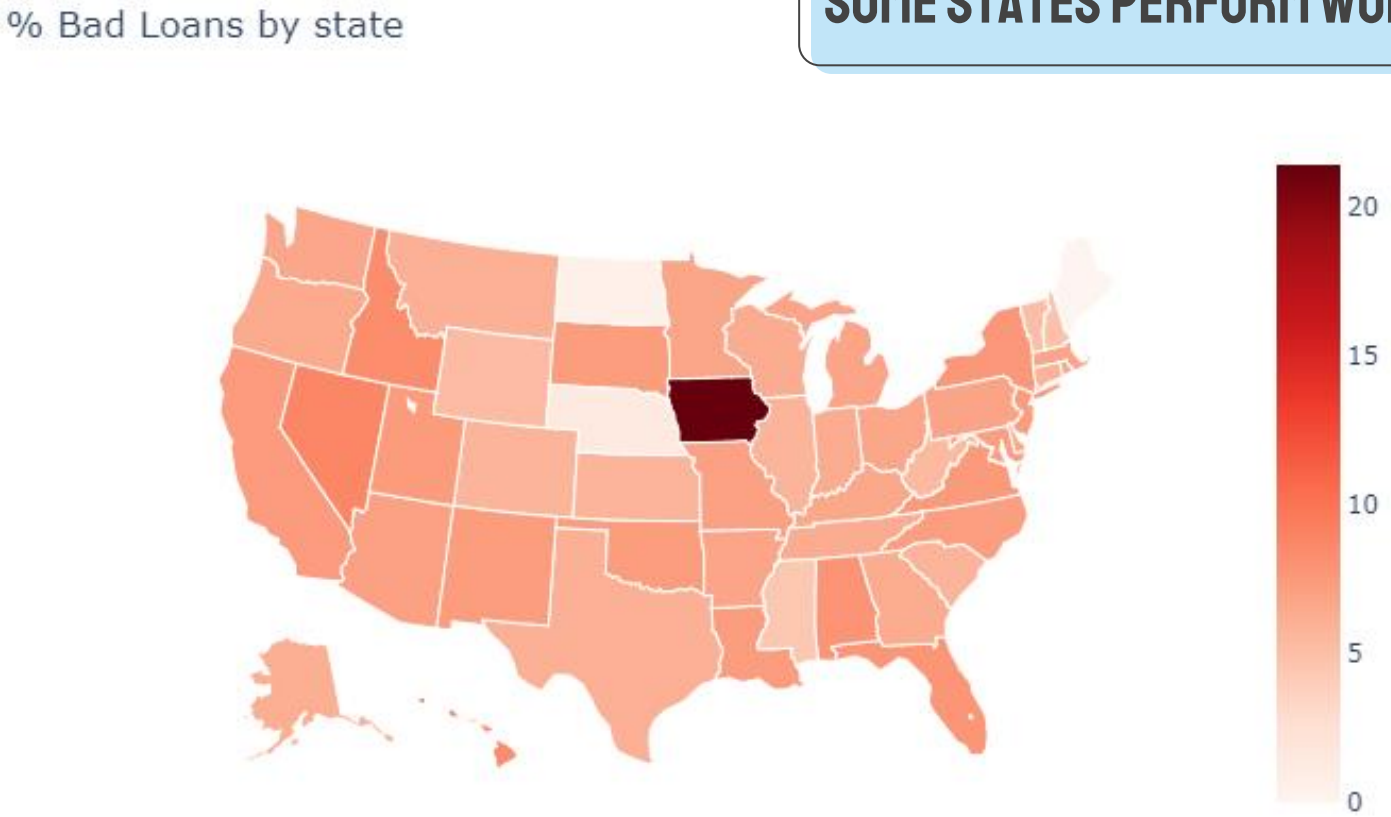
EDUCATION



SMALL BUSINESS

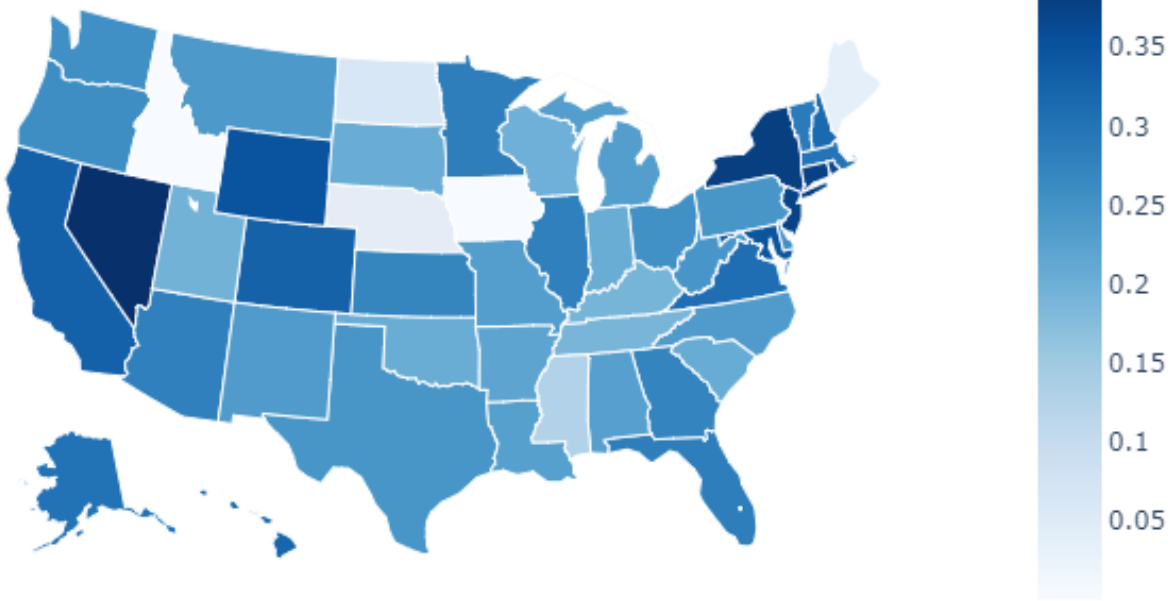
RENEWABLE ENERGY

SOME STATES PERFORM WORSE THAN OTHERS

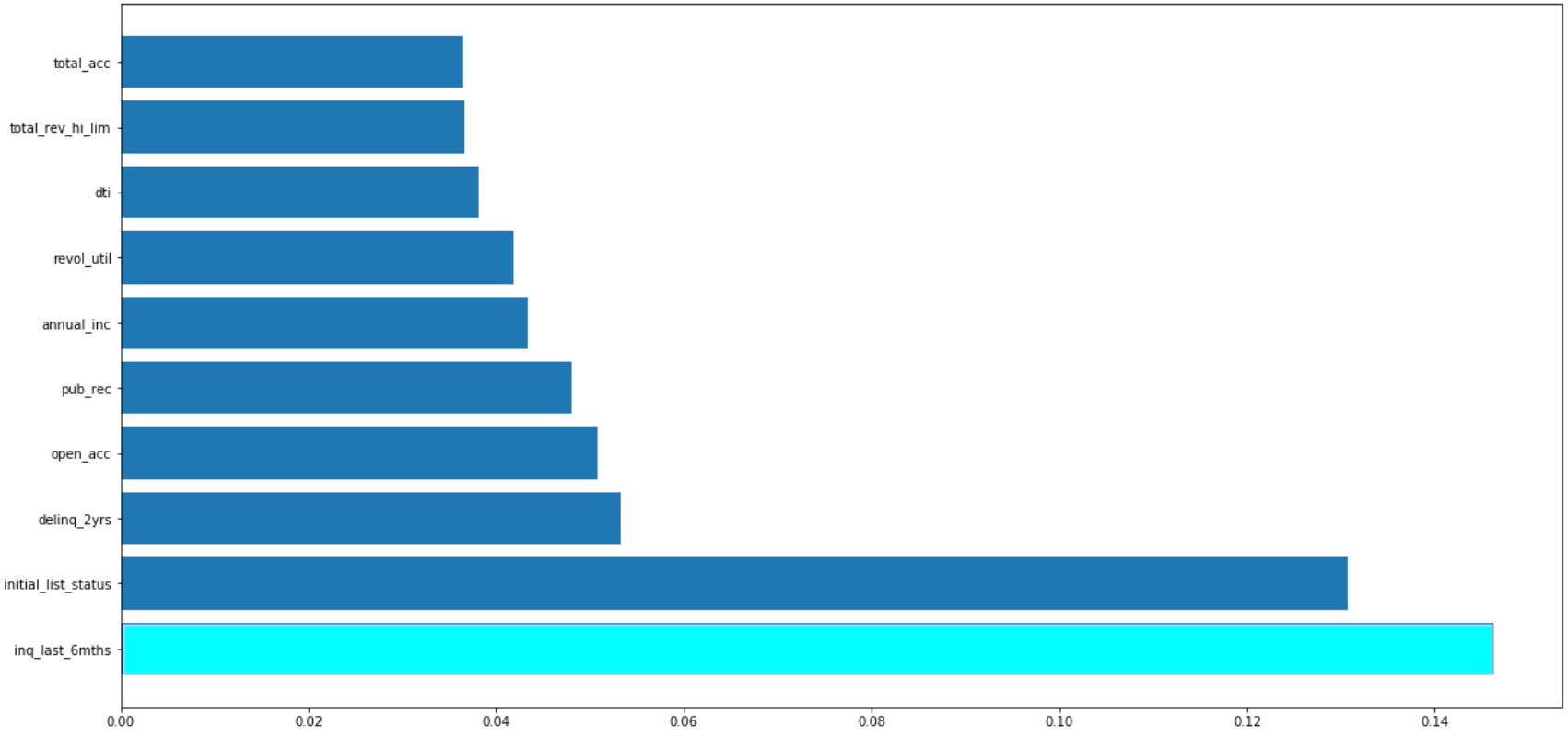


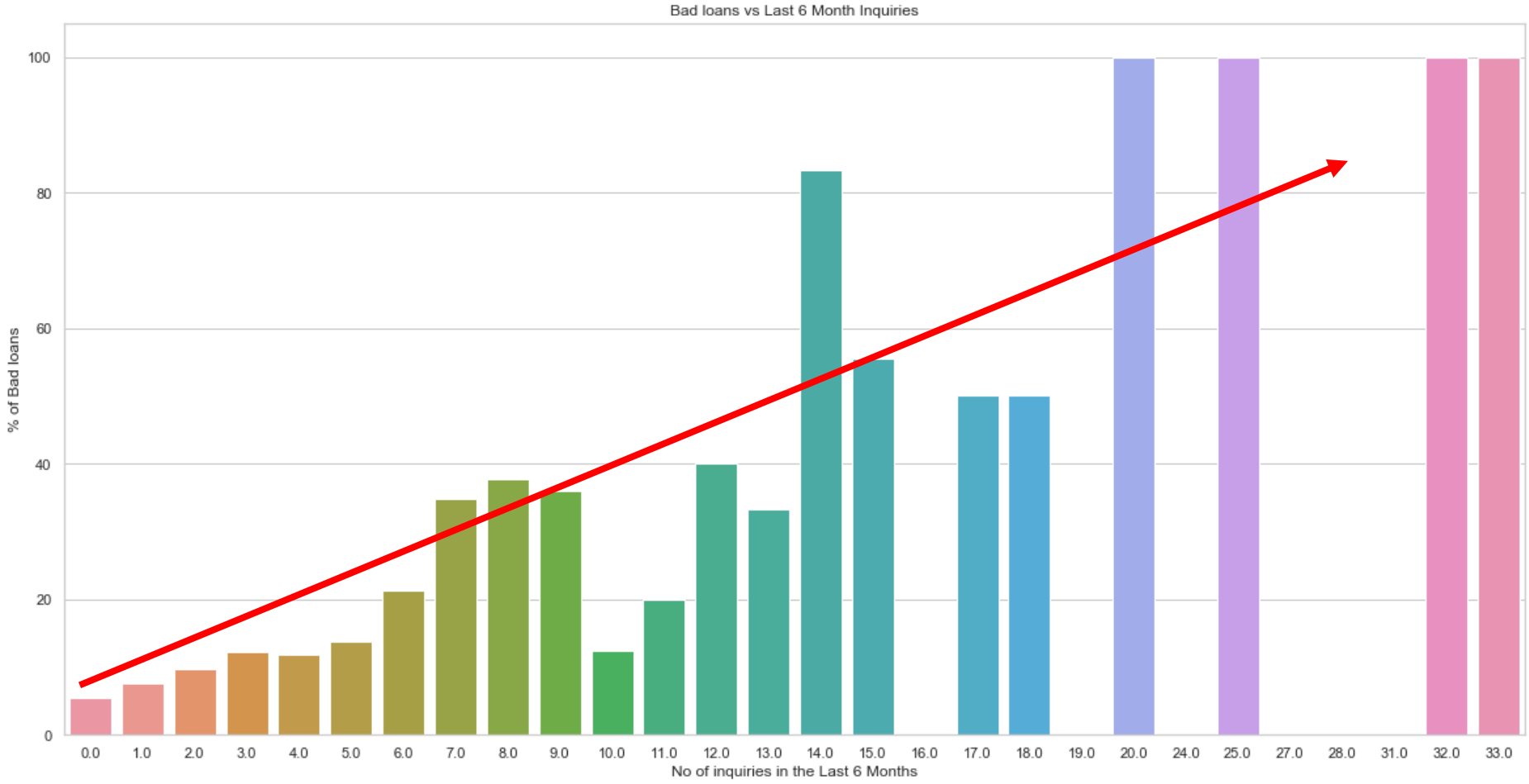
INCREASE LENDING CLUB REACH

% of Lending Club Popularity by State



USEFUL VARIABLES FOR MODELING




Bad loans vs Last 6 Month Inquiries
% of Bad loans
0
20
40
60
80
100
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0
16.0
17.0
18.0
19.0
20.0
24.0
25.0
27.0
28.0
31.0
32.0
33.0
No of inquiries in the Last 6 Months

NEXT STEPS

1. Loan Maturity
2. More Robust Models
3. Deeper Dive into other categories and variables