

Domain Learning

Domain Learning

What: In this section, you are trying to acquire knowledge and identify patterns in the domain of credit risk using the information provided by the AI system. The questions in this section test if you are able to gain a comprehensive understanding of how certain variables and features contribute to the prediction of credit risk. The idea here is that if you are able to use the information provided by the AI system to extract insights about how features contribute to AI predictions, you can apply this knowledge to obtain favourable outcomes.

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what are the prediction probabilities for applicant 1.

The model predicts the instance with **id equal to 1** as:

- **bad credit risk** with **65.012%** probability
- **good credit risk** with **34.988%** probability

What is the model's prediction for applicant 1?

💡 Tip: If the model's prediction probability for an applicant as "good credit" risk is above 50%, the model prediction for that instance is "good credit risk", and vice versa

❶ Please select one answer

- Good credit risk.
 Bad credit risk.

*

what are the prediction probabilities for applicant 1

The model predicts the instance with **id equal to 1** as:

- **bad credit risk** with **65.012%** probability
- **good credit risk** with **34.988%** probability

give me a list of important features for the model's prediction of applicant 1

For the model's predictions on instance with **id equal to 1**, the importance of the features have the following ranking, where 1 is the most important feature:

- 1: loanpurposeusedcar
- 2: nocurrentloan
- 3: criticalaccountloanselsewhere
- 4: hascoapplicant
- 5: loanpurposeretraining
- 6: hasguarantor
- 7: yearsatcurrentjoblessthan1

If you want to change the model's prediction for applicant 1, which feature will make the most impact?

❶ Please select one answer

- Critical account/loans elsewhere.
 Loan purpose used car.
 No current loan.

*

what are the prediction probabilities for instance id 1

The model predicts the instance with **id equal to 1** as:

- **bad credit risk** with **65.012%** probability
- **good credit risk** with **34.988%** probability

show me the data for applicant 1

For the data with **id equal to 1**, the features are
loanpurposebusiness: 0.0

what are the prediction probabilities for instance id 1 if loanpurposeretraining is set to 1

The model predicts the instance with id equal to 1 and loanpurposeretraining is set to 1.0 as:

- bad credit risk with 39.698% probability
- good credit risk with 60.302% probability

loanpurposeeducation: 0.0
loanpurposeelectronics: 1.0
loanpurposerefurniture: 0.0
loanpurposehomeappliances: 0.0
loanpurposenewcar: 0.0
loanpurposeother: 0.0
loanpurposesepairs: 0.0
loanpurposeretraining: 0.0
numberofflableindividuals: 1

How does the prediction probability change for applicant 1 if he takes a loan for some training rather than electronics?

① Please select one answer

- The model's predictions are flipped
- The model's predictions remain the same

* How accurate is the model at predicting the credit risk score for people who are asking for loans for home appliances purposes?

The model scores 100.0% accuracy on the data where loanpurposehomeappliances equal to true

How accurate is the model at predicting the credit risk score for people who are asking for loans for training purposes?

The model scores 71.429% accuracy on the data where loanpurposeeducation equal to true.

You are given the accuracy of the model predictions for the subgroups of data, with loan purpose as home appliances and with loan purpose as education. Which group of predictions is more likely to be correct?

① Please select one answer

- Subgroup with loan purpose as home appliances.
- Subgroup with loan purpose as education.

* what are the categories of data where the model typically gives incorrect predictions

For all the instances in the data, the model typically predicts incorrect:

if (nocurrentloan > 0.5) and (savingsaccountbalancegreaterorequalthan200 <= 0.5) then then the model is incorrect 100.0% over 6 samples

if (nocurrentloan <= 0.5) and (loanduration <= 33.0) and (age <= 21.5) then then the model is incorrect 60.0% over 5 samples

Show me the data for applicant 315

For the data with id equal to 315, the features are

gender: 1
foreignworker: 0
single: 1
age: 31
nocurrentloan: 1
loanamount: 2746
loanrateaspercentofincome: 4
yearsatcurrenthome: 4
numberofotherloansatbank: 1
savingsaccountbalancegreaterorequalthan200: 0

Does applicant 315 fall in the category highlighted in the screenshot on the left?

① Please select one answer

- No
- Yes

* What are the most important features for determining whether those who are applying for furniture loans are good credit risk?

For the model's predictions on instance with loanpurposerefurniture equal to true, the importance of the features have the following

ranking, where 1 is the most important feature:

- 1: loanpurposeusedcar
- 2: nocurrentloan
- 3: criticalaccountloanselsewhere
- 4: hascoapplicant
- 5: loanpurposeretraining
- 6: hasguarantor

Is having a guarantor more important or having a co-applicant for determining whether those who are applying for furniture loans are good credit risk?

① Please select one answer

- Having a co-applicant.
- Having a guarantor.

* what is the accuracy of model predictions for applicants who have a guarantor?

The model scores **80.0% accuracy** on the data where **hasguarantor equal to true**.

Feedback 

How likely is a model to be incorrect about applicants who have a guarantor?

① Please select one answer

① Please check the format of your answer.

- Very likely (more than 75%)
- Very unlikely (less than 25%)

* what are the prediction probabilities for 795?

The model predicts the instance with **id equal to 795** as:

- **bad credit risk** with **24.037%** probability
- **good credit risk** with **75.963%** probability

Feedback 

What is the likelihood that the machine predicts applicant 795 as a good credit risk?

① Please select one answer

- Very likely (more than 75%)
- Not very likely (less than 25%)

Decision Support

Decision Support

What: In this section, you are trying to make decisions with the help of the Credit risk prediction AI. The questions in the section assess if you understand the reasons behind the AI system's predictions and when you should exercise caution while considering the AI predictions for your decision. The idea here is that the AI system should communicate the uncertainty and limitations of the predictions. It should give you easy-to-understand information that is actionable for making decisions.

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what are the categories of data where the model typically gives incorrect predictions

For all the instances in the data, the model typically predicts incorrect:

if (nocurrentloan > 0.5) and (savingsaccountbalancegreaterorequalthan200 <= 0.5) then then the model is incorrect 100.0% over 6 samples

if (nocurrentloan <= 0.5) and (loanduration <= 33.0) and (age <= 21.5) then then the model is incorrect 60.0% over 5 samples

if (nocurrentloan <= 0.5) and (loanduration > 33.0) and (unemployed > 0.5) then then the model is incorrect 100.0% over 3 samples

what are the prediction probabilities for 272

The model predicts the instance with **id equal to 272** as:

- **bad credit risk** with **88.082%** probability
- **good credit risk** with **11.918%** probability

Show me the data for applicant 272

For the data with **id equal to 272**, the features are

gender: 1
foreignworker: 0
nocurrentloan: 1
savingsaccountbalancegreaterorequalthan200: 0
savingsaccountbalancegreaterorequalthan500: 0

You are given the information about where the model is typically incorrect, some information about applicant 272's profile, and the model's prediction. How likely is it that the model is correct about the applicant?

① Please select one answer

- Very likely (more than 75%).
 Very unlikely (less than 25%).

*

show me some instances where the model prediction were incorrect

For all the instances in the data, the model is incorrect 51 out of 200 times (error rate 0.255). Here are the ids of instances the model predicts incorrectly:

```
[993 971 27 558 55 175 481 310 614 790 918 230
819 141 331 862 272 531 740 926 412 796 601 386
485 789 466 382 780 495 624 876 615 278 424 54
403 757 457 986 864 927 351 945 826 999 315 834
435 722 653]
```

From the list in the screenshot above select the instance where the model prediction was incorrect.

① Please select one answer

- 600
 457
 2

* show me the prediction probabilities of 175

The model predicts the instance with **id equal to 175** as:

- bad credit risk with 12.723% probability
- good credit risk with 87.277% probability

* show me the prediction probabilities of 513

The model predicts the instance with **id equal to 513** as:

- bad credit risk with 28.197% probability
- good credit risk with 71.803% probability

what are the categories of data where the model typically gives incorrect predictions

For **all** the instances in the data, the model typically predicts incorrect:

if (nocurrentloan > 0.5) and (savingsaccountbalancegreaterorequalthan200 <= 0.5) then then the model is incorrect 100.0% over 6 samples

if (nocurrentloan <= 0.5) and (loanduration <= 33.0) and (age <= 21.5) then then the model is incorrect 60.0% over 5 samples

You are given the information that applicants 175 and 513 belong to the first and second categories respectively. Which model prediction is more likely to be incorrect: the one for applicant 175 or the one for applicant 513?

Please select one answer

175

513

* what are the prediction probabilities for 272 and give a list of feature importance for the prediction?

The model predicts the instance with **id equal to 272** as:

- bad credit risk with 88.082% probability
- good credit risk with 11.918% probability

For the model's predictions on instance with **id equal to 272**, the importance of the features have the following ranking, where 1 is the most important feature:

- 1: loanpurposeusedcar
- 2: nocurrentloan
- 3: criticalaccountorloanselsewhere
- 4: hascoapplicant
- 5: loanpurposeretraining

What is the model's prediction for applicant 272?

Tip: If the model's prediction probability for an applicant as "good credit" risk is above 50%, the model prediction for that instance is "good credit risk", and vice versa

Please select one answer

Good credit risk.

Bad credit risk.

* what are the prediction probabilities for 272 and give a list of feature importance for the prediction?

The model predicts the instance with **id equal to 272** as:

- bad credit risk with 88.082% probability
- good credit risk with 11.918% probability

For the model's predictions on instance with **id equal to 272**, the importance of the features have the following ranking, where 1 is the most important feature:

- 1: loanpurposeusedcar
- 2: nocurrentloan
- 3: criticalaccountorloanselsewhere
- 4: hascoapplicant
- 5: loanpurposeretraining

Does "not having a current loan" impact the model's prediction for applicant 272 more or "having a co-applicant"?

Please select one answer

Not having a current loan has more impact.

- Having a co-applicant has more impact.

*

Show me the data for applicant 272

For the data with **id equal to 272**, the features are
criticalaccountorloanselsewhere: 0
foreignworker: 0
single: 1
age: 36
loanduration: 48
loanamount: 12169
loanrateaspercentofincome: 4
yearsatcurrenthome: 4

how does setting criticalaccountorloanselsewhere to 1 change model predictions probabilities for 272

The model predicts the instance with **id equal to 272 and criticalaccountorloanselsewhere is set to 1** as:

- **bad credit risk** with **80.967%** probability
- **good credit risk** with **19.033%** probability

what are the prediction probabilities for 272

The model predicts the instance with **id equal to 272** as:

- **bad credit risk** with **88.082%** probability
- **good credit risk** with **11.918%** probability

Feedback

How does increasing "criticalaccountorloanselsewhere" from 0 to 1 impact the model-predicted probability of being a bad credit risk for applicant 272?

① Please select one answer

- Decreases the probability of being a bad credit risk.
- Increases the probability of being a bad credit risk.

Capability Assessment

Capability Assessment

What: You were just introduced to the Credit risk prediction AI. Your task is to explore the AI system's functionality and assess its applicability to your role if you were a loan officer. The questions in this section will be investigating your perception of the system's predictive abilities, the reasons prompting those predictions, and the specific scenarios or conditions where the system may produce incorrect predictions. The idea here is, by gaining insights into the system's strengths and weaknesses, you will be better equipped to decide when and how to utilize the AI system in the credit risk assessment process.

* show me the prediction probabilities of applicant 14

The model predicts the instance with id equal to 14 as:

- bad credit risk with 35.093% probability
- good credit risk with 64.907% probability

Feedback *

What is the model's prediction for instance id 14?

① Please select one answer

Good credit risk

Bad credit risk

* TalkToModel

what are the 5 most important features for machine predictions for applicant 14?

For the model's predictions on instance with id equal to 14, the top 5 most important features are as follows, where 1 is the most important feature:

- 1: loanpurposeusedcar
- 2: nocurrentloan
- 3: hascoapplicant
- 4: criticalaccountloanselsewhere
- 5: hasguarantor

What are the three most important features for the model's prediction for applicant 14?

① Please select one answer

Loan purpose car, no current loan, critical account/loans elsewhere.

Has co-applicant, loan purpose car, no current loan.

Loan purpose car, loan duration, loan amount.

* TalkToModel

can you show me the ids the model predicts as bad credit risk?

For the data with the model predicts bad credit risk, the instance id's are:

[993, 971, 27, 706, 496, 578, 55, 481, 310, 788, 1, 736, 783, 141, 295, 272, 569, 252, 740, 926, 386, 236, 958, 583, 545]

382, 946, 596, 876, 615, 249, 403, 580, 986, 378, 320, 945, 751, 240, 648, 999, 922, 832]

Which one do you want to see?

Choose the instance id that the model predicted as a bad credit risk.

Please select one answer

970

2

236

*

TalkToModel

Let's get started. Ask me something!

show me the prediction probabilities for sample 971

The model predicts the instance with id equal to 971 as:

- bad credit risk with 50.088% probability
- good credit risk with 49.912% probability

TalkToModel

show me the data for applicant 971

For the data with id equal to 971, the features are
loanpurposebusiness: 0.0
loanpurposereducation: 0.0
loanpurposeelectronics: 0.0
loanpurposesefurniture: 0.0
loanpurposenewappliances: 0.0
loanpurposenewcar: 1.0
loanpurposeother: 0.0
loanpurposerepairs: 0.0

what would happen to the prediction probabilities if I change loanpurposenewcar to 0 and loanpurposeelectronics to 1?

The model predicts the instance with id equal to 971 and loanpurposenewcar is set to 0.0 and loanpurposeelectronics is set to 1.0 as:

- bad credit risk with 36.665% probability

- good credit risk with 63.335% probability

How does changing the purpose of a loan from getting a car to getting an electronic item change the model's prediction for applicant 971?

💡 Tip: If the model's prediction probability for an applicant as "good credit" risk is above 50%, the model prediction for that instance is "good credit risk", and vice versa.

Please select one answer

The model prediction is flipped.

The model prediction remains the same.

*

show me the prediction probabilities of applicant 435?

The model predicts the instance with id equal to 435 as:

- bad credit risk with 14.613% probability
- good credit risk with 85.387% probability

show me the prediction probabilities of applicant 773?

The model predicts the instance with id equal to 773 as:

- bad credit risk with 6.278% probability
- good credit risk with 93.722% probability

Is the model more confident about its prediction of applicant 435 or 773?

Please select one answer

Please check the format of your answer.

435

773

*

what are the categories of data where the model typically gives incorrect predictions

For all the instances in the data, the model typically predicts incorrect:

if (nocurrentloan > 0.5) and (savingsaccountbalancegreaterorequalthan200 <= 0.5)
then then the model is incorrect 100.0% over 6 samples

if (nocurrentloan <= 0.5) and (loanduration <= 33.0) and (age <= 21.5) then then the model is incorrect 60.0% over 5 samples

if (nocurrentloan <= 0.5) and (loanduration > 33.0) and (unemployed > 0.5) then then the model is incorrect 100.0% over 3 samples

show me the data for applicant 175

For the data with id equal to 175, the features are

gender: 0
foreignworker: 0
single: 0
age: 53
loanduration: 30
loanamount: 7485
loanrateaspercentofincome: 4
yearsatcurrenthome: 1
numberofotherloansatbank: 1
numberofflableindividuals: 1
nocurrentloan: 1
checkingaccountbalancegreaterorequalto: 0
checkingaccountbalancegreaterorequalthan200: 0
savingsaccountbalancegreaterorequalthan200: 0

TalkToModel

savingsaccountbalancegreaterorequalthan500: 0

Hello 😊, I'm a machine learning model trained to predict whether someone is good or bad credit risk.

Let's get started. Ask me something!

show me the prediction probabilities of applicant 175

The model predicts the instance with id equal to 175 as:

- bad credit risk with 12.723% probability
- good credit risk with 87.277% probability

Feedback

Consider the category (of data where the model typically makes mistakes) Applicant 175 falls under. How likely is the model prediction incorrect?

💡 Tip: The model's error rate is supposed to help you decide the likelihood of the model prediction being correct or incorrect.

ⓘ Please select one answer

Very unlikely (less than 25%)

Very likely (more than 75%)