

-100%

Case Study

A bank customer requests the reasoning behind her bank loan rejection in order to understand why her loan has been rejected by an AI.

(We may assume that the customer had no specialized knowledge of loan application processing nor of computer routines ("algorithms") and A.I.)

The explanation he is given was itself provided by an algorithm. This produced both a graphical and a textual explanation for the A.I.'s decision to reject his application.

The Explanation Proffered by the XAI

[Text quoted from the preamble to the XAI's explanation is presented here in blue.]

FICO, a credit scoring company, released an anonymized dataset of Home Equity Line of Credit (HELOC) applications made by real homeowners. A HELOC is a line of credit typically offered by a bank as a percentage of home equity (the difference between the current market value of a home and the outstanding balance of all liens, e.g., mortgages). The customers in this dataset have requested a credit line in the range of \$5,000 - \$150,000. The fundamental task is to use the information about the applicant in their credit report to predict whether they will make timely payments over a two-year period. This is the machine learning task that we focus on. The machine learning prediction is then used by loan officers to decide whether the homeowner qualifies for a line of credit and, if so, how much credit should be extended.

Explanation to be Evaluated

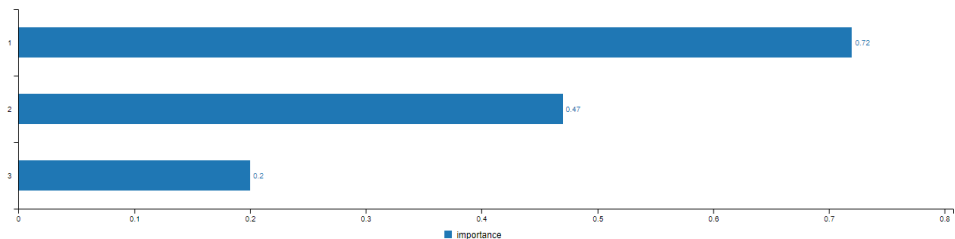
Several features in Jason's application fall outside the acceptable range. All would need to improve before acceptance was recommended.

Factors contributing to Jason's application denial

- 1. The value of **Consolidated risk markers** is **65**. It needs to be around **72** for the application to be approved.
- 2. The value of **Average age of accounts in months** is **52**. It needs to be around **68** for the application to be approved.
- 3. The value of **Months since most recent credit inquiry not within the last 7 days** is **2**. It needs to be around **3** for the application to be approved.

Relative importance of factors contributing to denial

While all three factors need to improve as indicated above, the most important to improve first is the Consolidated risk markers. Jason now has insight into what he can do to improve his likelihood of being accepted.



Instructions for completing this survey

Please check the most appropriate option for each of the questions below. If you select "unable to judge" explain why.