Guido,

In trying to determine if it’s possible for us to accurately predict how much credit loan a customer should be given, I tested three regressor models (Random Forest, Linear, and Support Vector Regressor). The Random Forest Regressor was able to provide the highest predictability of limit balance, but it still had a low accuracy score. I wouldn’t confidently say that we can predict the balance limit given our current data. The RMSE and R Squared values of our regressor model were also very low. This further provides evidence that our model can’t accurately predict what limit customers should be given.



I also tested our ability to predict if a customer will default on their loan by using two classifier models (Random Forest and Decision Tree Classifier). The Random forest classifier had the highest accuracy of prediction with high precision rate of about 0.82. Given our features, we can fairly accurately predict if a person will default on their loan.



We cannot with 100% certainty ensure that customers pay their loads. Overall, more people don’t default on their loans. There’s no correlation between gender or marital status as to if someone will default on a loan. There’s a stronger correlation to Pay\_0 and default payment than any other pay value. This means as pay progresses, it’s less likely to default.

There is a slightly positive or negative relationship between default or not default next month and Pay, Bill\_Amt, Pay\_Amt, the relationship gets a smaller correlation as the months progress. Example: if initially Bill\_Amt1 has a 0.019 correlation with default next month, the correlation gets smaller each month until it reaches 0.00537 by BILL\_AMT6.

In summary, we can’t predict what credit limit should be given to customers, but given the data we have, we can fairly accurately predict if it’s likely they’ll default on their loan. While this isn’t perfect, the data found can help the reputation of the company. I suggest we use their default prediction to factor into what limit they should be given.

Thanks,

Kristen Luedtke