



# Home Credit Default Risk



Present to \_VOIS TechnicalAssessment

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Github: <https://github.com/AhmadAlhati/Kaggle-Home-Credit-Default-Risk.git>



## Business Case

*“The only good loan is one that gets paid back.” — Robert Wilmers, chairman and CEO of M&T Bank*

An existential problem for any Loan providers today is to find out the Loan applicants who are very likely to repay the loan. This way companies can avoid losses and incur huge profits.

Loans are also as important to Lenders as they are for Borrowers. Almost all Banking Organizations make most of their revenues from the interests generated through loans. However, the caveat here is that the lenders make a profit only if the loan gets repaid. The Lending Organizations are faced with the tough task of analyzing the risk associated with each client. Therefore, it is important to identify the risky behaviors of clients and make educated decisions.



# Business Objective

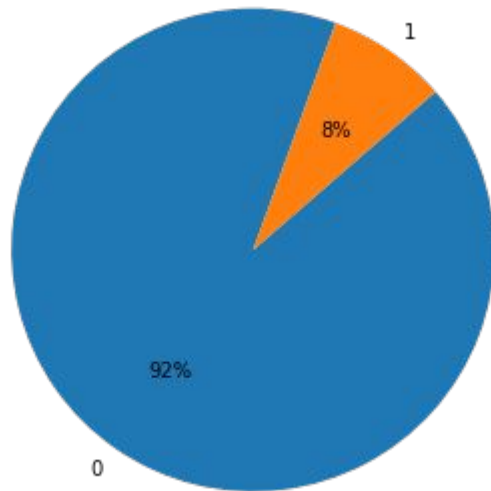
- Decision support process.
- Increase borrower base.
- Profit increase.
- Revenue increase.
- Decreasing exposure risk.

# Pipeline



## Key Insights

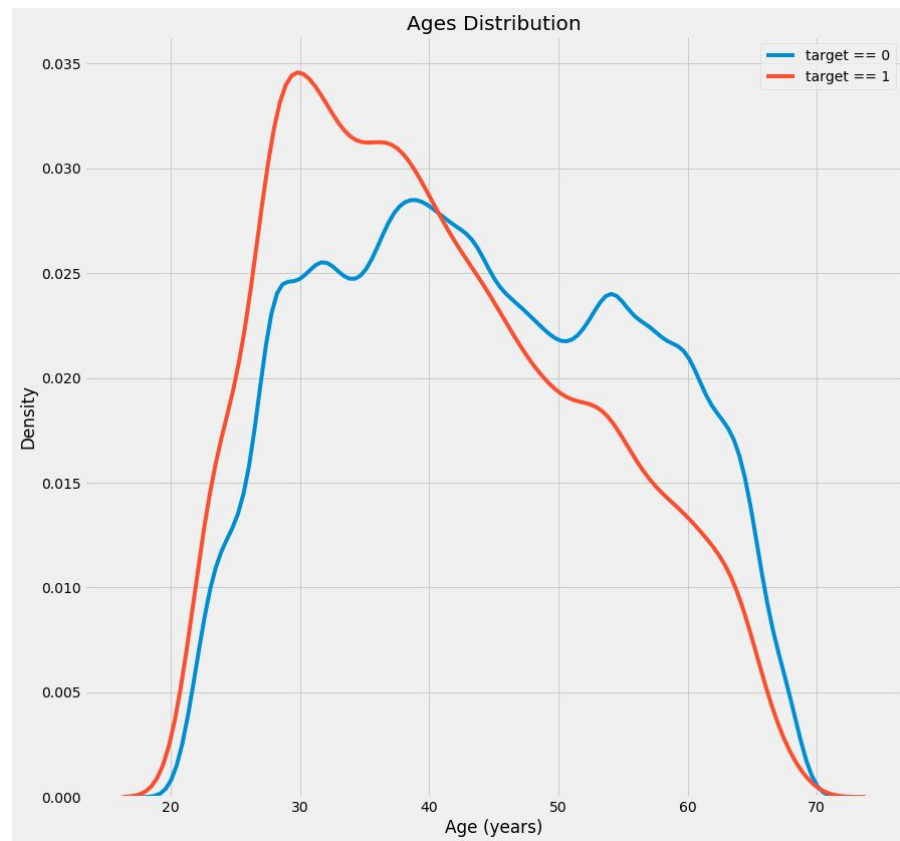
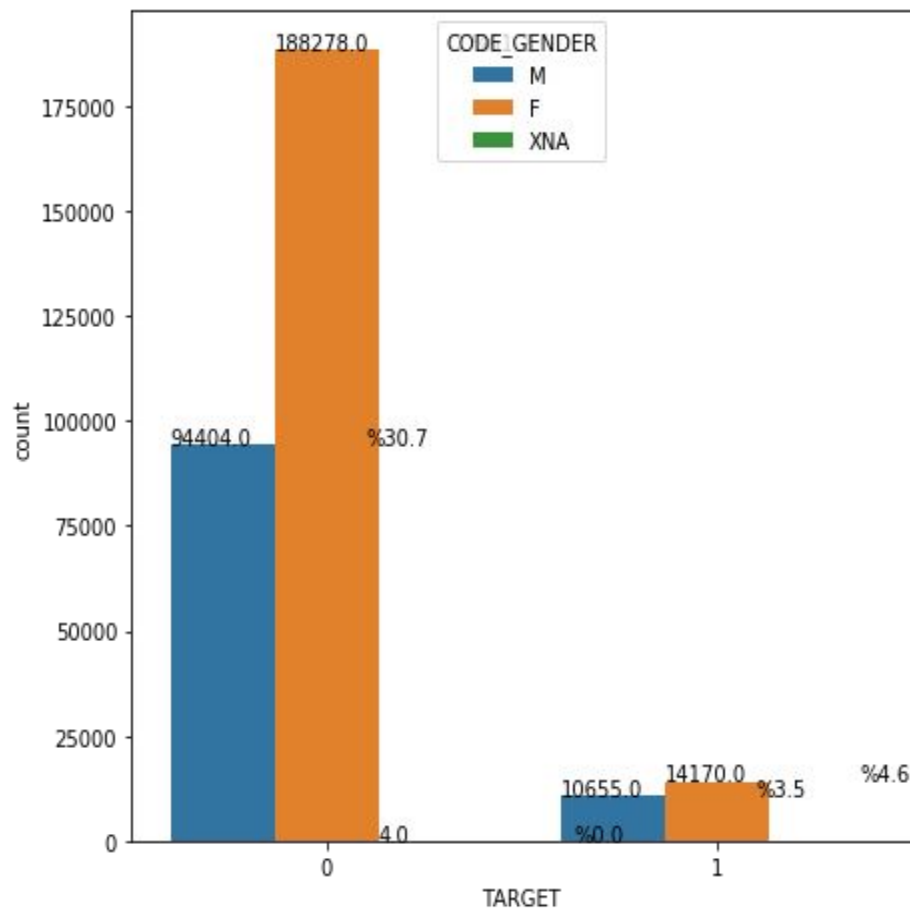
Target Count for  
training data

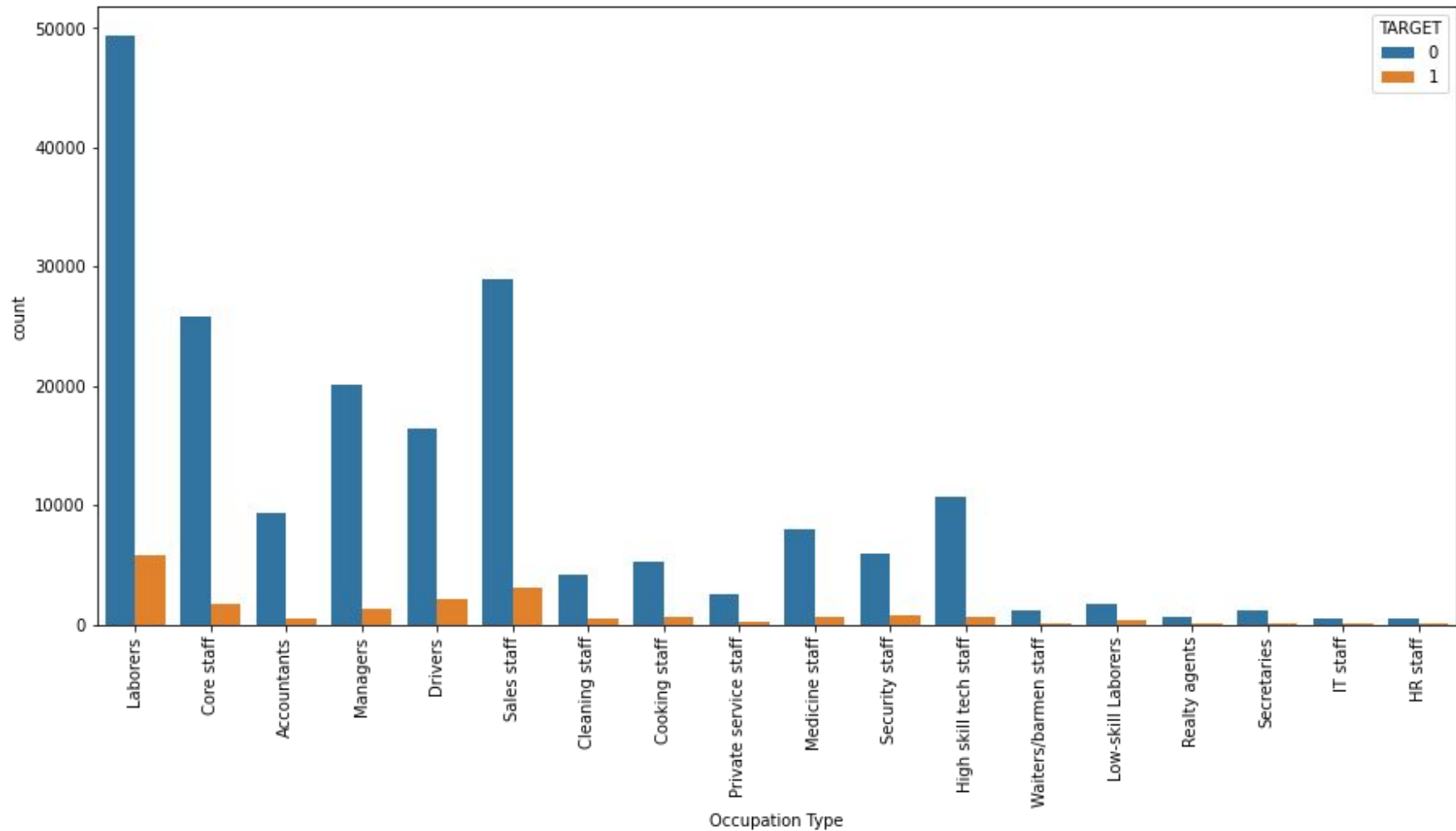


Unbalanced  
data issue

**NOTE:** All insights are available on notebook & [analysis report.html](#)

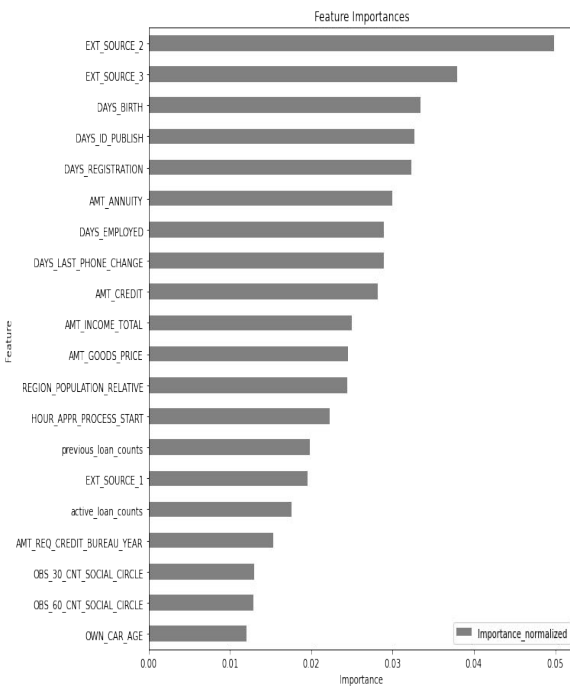
## Age & Gender VS TARGET



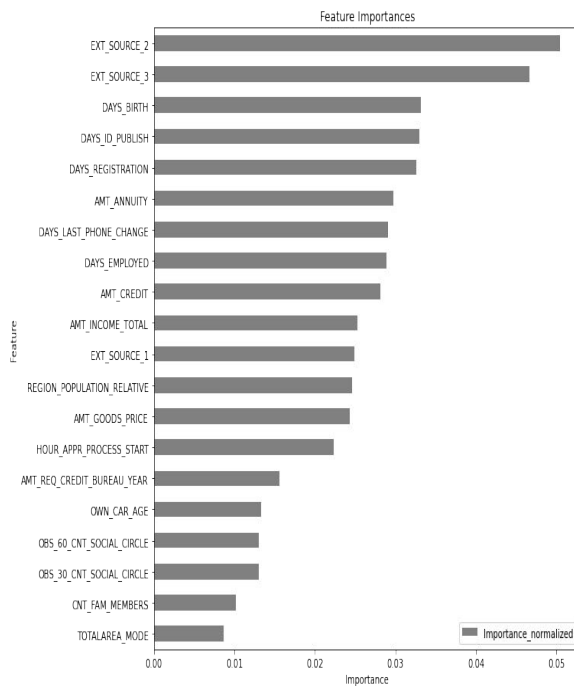




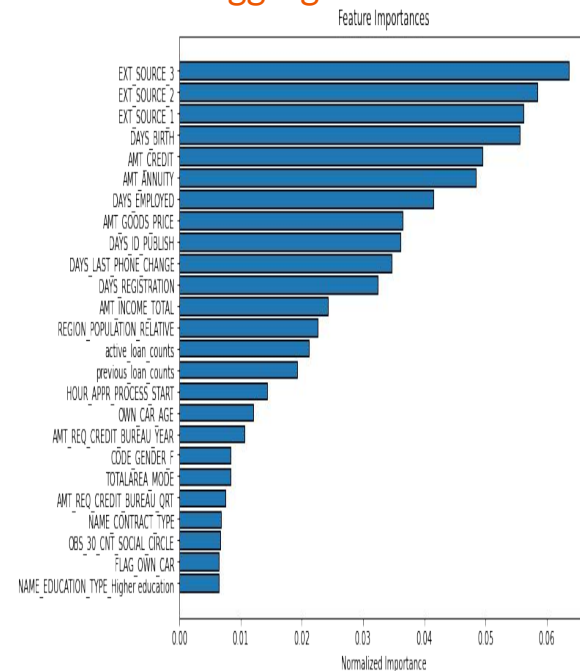
# ML Models



## RF with row data



## LightGBM with Aggregated features





## Results & Conclusions

Using **AUC (Area under the ROC Curve)** we achieved ~ 76% accuracy, which is not suitable for such a risky problem.

	fold	train	valid
0	0	0.816513	0.756910
1	1	0.812614	0.759456
2	2	0.842369	0.764918
3	3	0.807922	0.760518
4	4	0.819030	0.760161
5	overall	0.819690	0.760363



## References

- <https://towardsdatascience.com/a-machine-learning-approach-to-credit-risk-assessment-ba8eda1cd11f>
- <https://www.kaggle.com/willkoehrsen/start-here-a-gentle-introduction>
- <https://medium.com/thecyphy/home-credit-default-risk-part-1-3bfe3c7ddd7a>
- <https://becominghuman.ai/lightgbm-on-home-credit-default-risk-prediction-5b17e68a6e9>



# Thank You!

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