

# Progress Report

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## 1 Research Objective and Goal

The objective of this study is to improve the booleanization part of algorithm from Truong et al. (2021). Starting with understanding the nonnegative matrix factorization problem and algorithms to solve it.

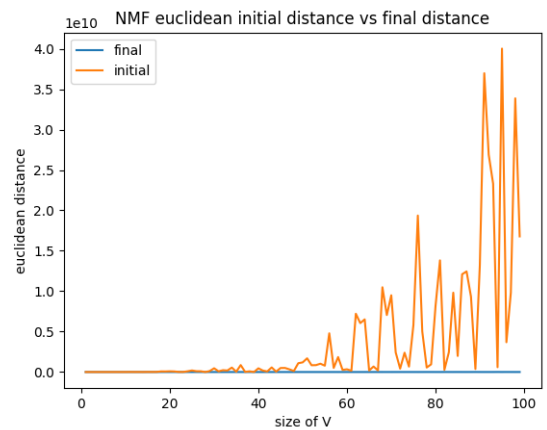
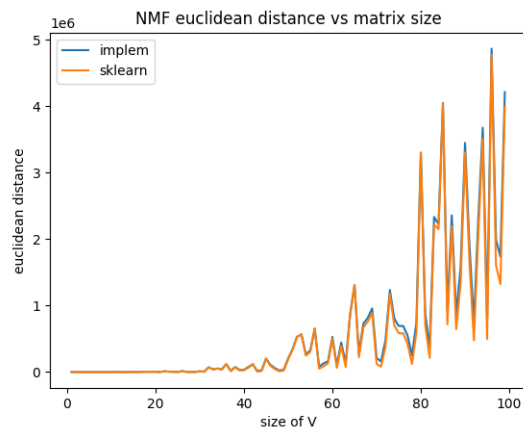
## 2 Short-Term Goals

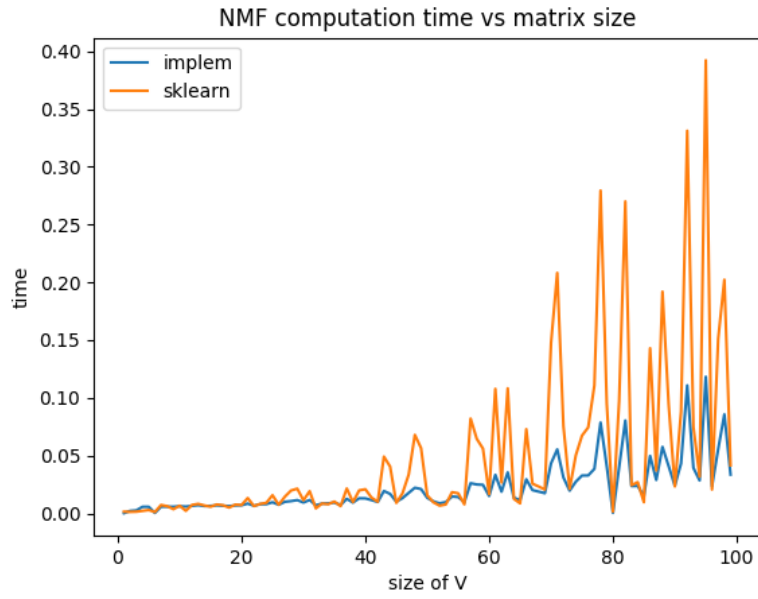
1. Implementing the NFM algorithm presented in Truong et al. (2021). Begin to read the paper Truong et al. (2021).

## 3 Progress

1. I have implemented the algorithm using numpy and compared it against the scikit-learn one.
2. I have started reading the paper but have some questions about the update of  $Y$  and the regularization.

## 4 Results





## References

Truong, D. P., Skau, E., Desantis, D., and Alexandrov, B. (2021). Boolean matrix factorization via nonnegative auxiliary optimization. *IEEE Access*, 9:117169–117177.