Bayesian Analysis of Credit Risk

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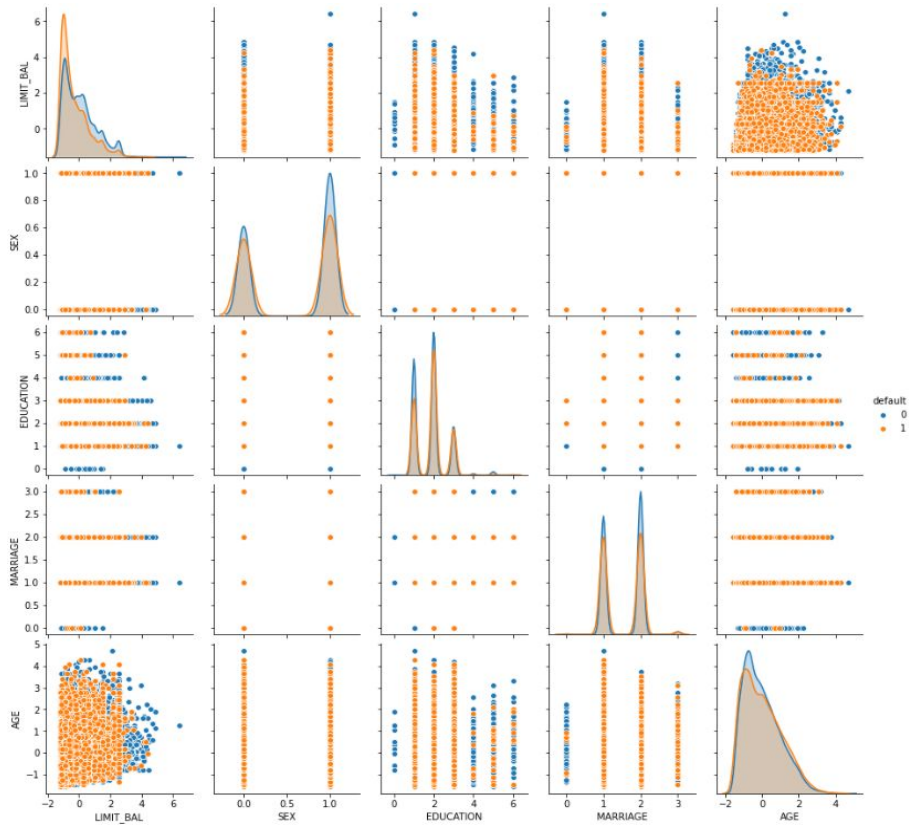
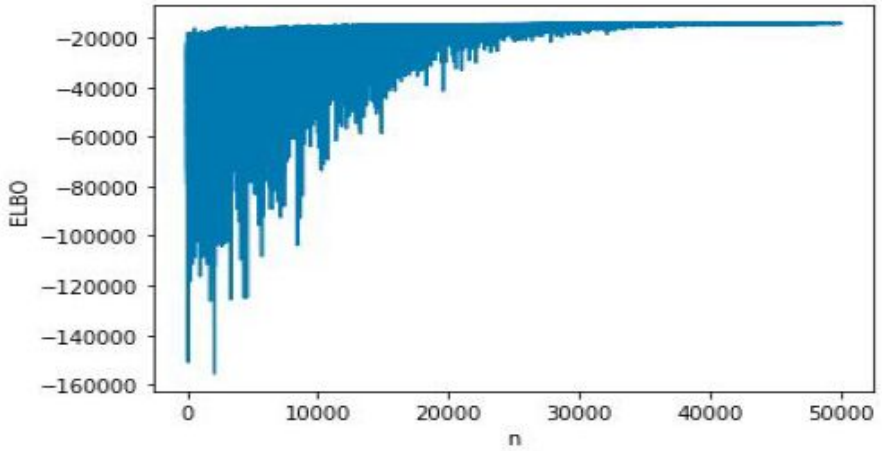
Project and Data Description

- Goal: Analyze posterior probability of default and predictors
- Data:
  - 30,000 records of credit card clients
  - Six month credit and debit records
  - Education and other demographics

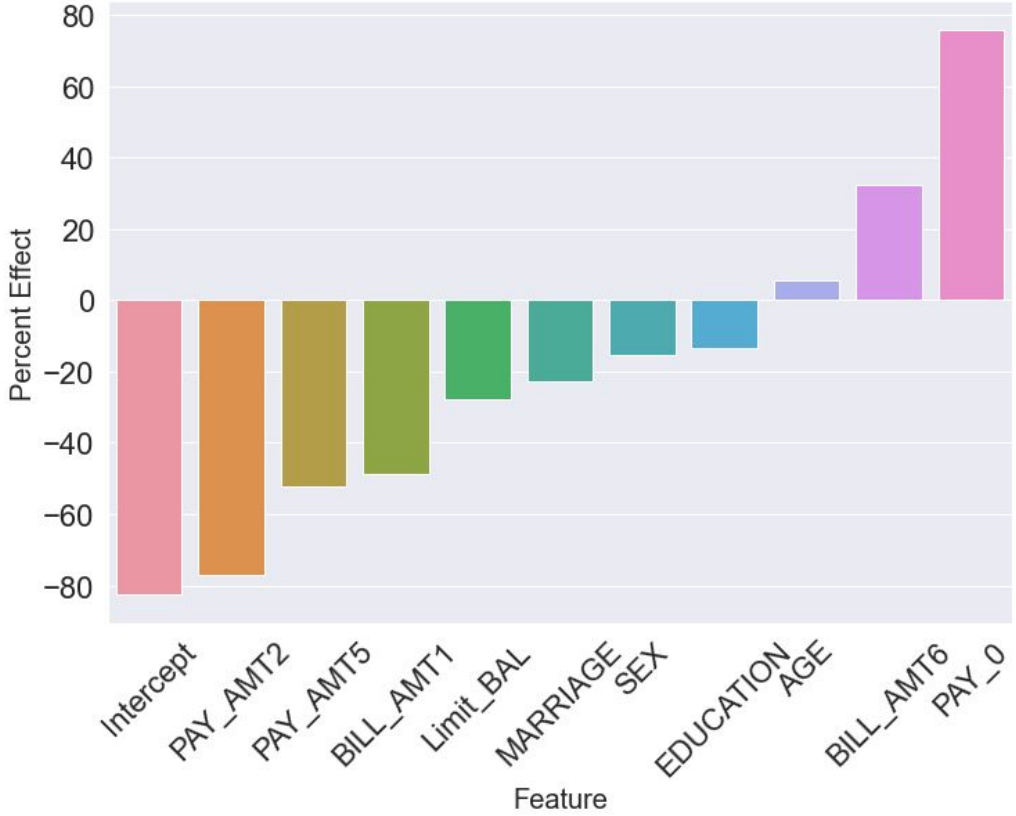


Bayesian Methods

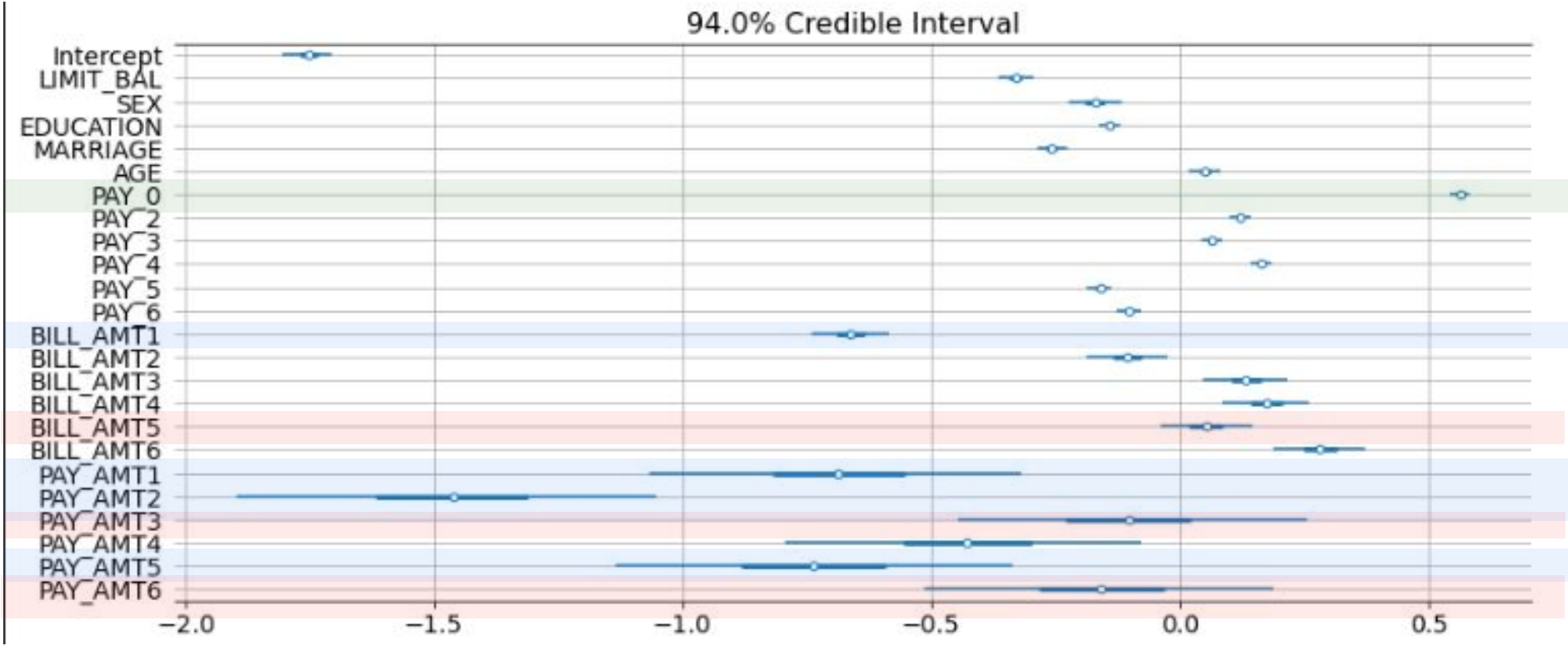
- Bayesian logistic regression
- Variational inference
  - Sampling is too resource intensive
- Uninformed priors



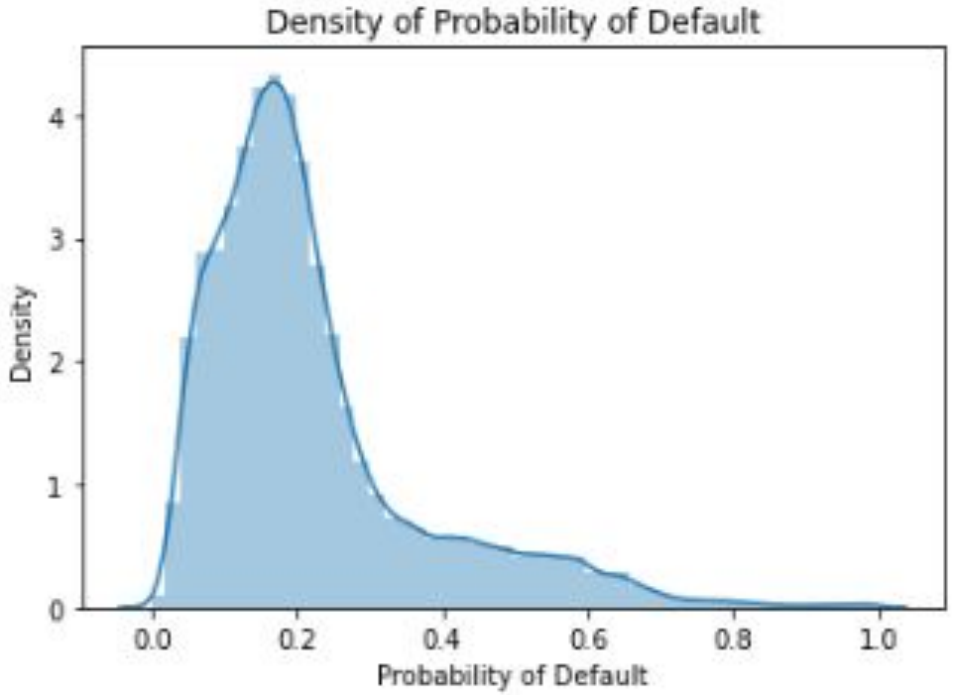
Percent Effect



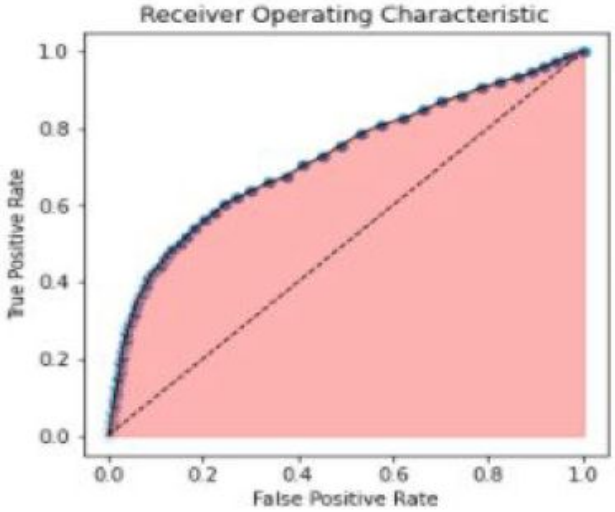
Forest Plot

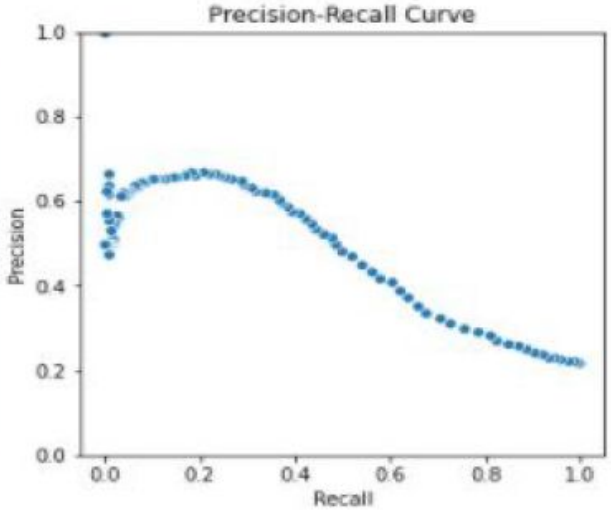

94.0% Credible Interval
Intercept
LIMIT_BAL
SEX
EDUCATION
MARRIAGE
AGE
PAY_0
PAY_2
PAY_3
PAY_4
PAY_5
PAY_6
BILL_AMT1
BILL_AMT2
BILL_AMT3
BILL_AMT4
BILL_AMT5
BILL_AMT6
PAY_AMT1
PAY_AMT2
PAY_AMT3
PAY_AMT4
PAY_AMT5
PAY_AMT6
−2.0
−1.5
−1.0
−0.5
0.0
0.5

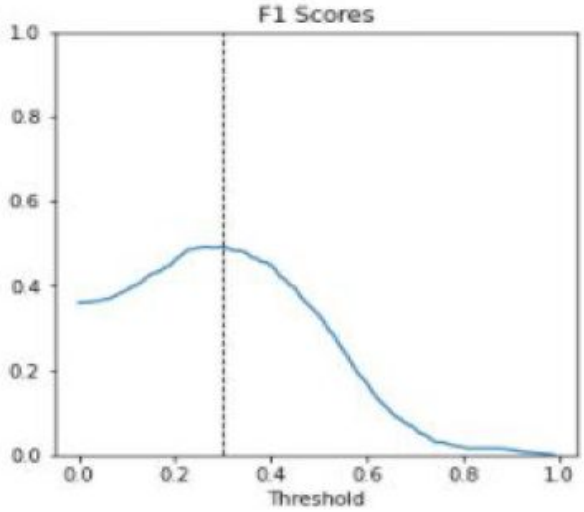
Posterior Probabilities



Results and Conclusions







Questions