

COST SENSITIVE MACHINE LEARNING MODEL FOR CREDIT CARD DELIQUENCY PREDICTION

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ABSTRACT

In recent years, there has been an increasing tendency to use machine learning models in various fields. In this paper, we would like to examine the example of Busan Bank of the financial field. The problem we are trying to solve is to distinguish a delinquent among credit card users, Further, we are more interested in credit card users who has spent more on credit card payments. The cost sensitive machine learning model are used in here. By using the cost sensitive model, we could put more weight on credit card users who spent more money than others. A study for cost sensitive model use the Bayes minimum risk classifier[1], but in here, we simply use the cost sensitive learning model by defining the empirical loss as:

$$R_{\text{emp}}(h) = \frac{1}{n} \sum_{i=1}^n w_i * L(h(x_i), y_i) \quad (1)$$

, where h is a hypothesis function, $L()$ is a loss function, x_i is a i -th pattern, y_i is a i -th label, and w_i is a weight for i -th sample.

As a result, we was able to design a model that took into account actual costs. How to utilize it remained as a challenge.

REFERENCES

1. Almhaithawi, Doaa and Jafar, Assef and Aljnidi, Mohamad, *Example-dependent cost-sensitive credit cards fraud detection using SMOTE and Bayes minimum risk*, SN Applied Science, Springer, 2020.