

Dear Prof. P. Giudici and Team,

we have examined the paper <https://doi.org/10.3389/frai.2019.00003> and submit to your attention some preliminary remarks.

The proposed models apply to ECAI peer-to-peer lending data some machine learning techniques aimed at predicting the default of the borrowers. Indeed, it is well known that the application of machine learning leads to particularly favorable results in terms of accuracy and discriminating capacity. Furthermore, the paper defines a topology in the space of the features of the borrowers, that visually appears effective in grouping the defaulted borrowers locally in space, and therefore it is suggested that the "proximity" could itself constitute a feature.

However, the models show a substantial invariance in terms of final metrics after introducing those "proximity features", but in our view, this could be linked to the choice of the performance metrics, which may be affected by the unbalance of the sample (note that all Accuracies result around 1- default rate). In this sense it would be interesting to examine the results in terms of precision, recall, F1, etc. and moreover, the outcome of random forest or neural network models with and without the introduction of that features, in order to test if the ability of such models to capture nonlinear relationships would experience a substantial improvement.

Anyway, although the inclusion of the "proximity features" does not improve materially the performance metrics, they could still be used in the practical assessments of the creditworthiness of companies, especially in the presence of simplified (linear) default probability models vs more complex topologies (for instance, those underlying the supply chain of a firm or group of firms).

As an aside remark, it is not clear from the paper if the topology is estimated once and for all throughout the validation folds: this case would result in leakage that we would suggest to remove.

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