## Defesa de Proposta de Tese: Leopoldo Soares de Melo Junior

Título: **Enhancing the performance of dynamic selection techniques for imbalanced credit scoring problems**

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Resumo:

Lenders, such as banks and credit card companies, use credit score models to evaluate the potential risk posed by lending money to consumers, and therefore to mitigate losses due to bad credit. The profitability of the banks thus highly depends on the models used to decide on the customer's loans. State of the art credit scoring models is based on machine learning and statistical methods. One of the major problems of this field is that lenders often deal with imbalanced datasets that usually contain many paid loans but very few not paid ones (called defaults). Recently, dynamic selection methods, combined with ensemble methods and preprocessing techniques, have been evaluated to improve classification models in imbalanced datasets presenting advantages over the traditional machine learning methods. In a dynamic

selection technique, the classifiers used to predict each sample are selected based on their competence in the local region in the feature space of the query sample. In this thesis, we evaluate different approaches to enhance state of the art in computing the local competence of base classifiers of dynamic selection techniques for imbalanced credit scoring problem. First, we redefine the local region definition. Next, we propose a new measure to compute the local competence of the base classifiers. Finally, we plan to combine these techniques to evaluate the improvement in imbalanced credit scoring datasets.

Banca:

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