

DIRECTED RISK RESEARCH PROBLEM STATEMENT

Risk Theme	Predictive modelling	Problem Nr.	PS18005
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PS Status	Open	Date	29 Jan 2018	Revised PS	n/a
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PROJECT TITLE: Investigating the transparent representation of machine learning applications

PROJECT GOAL

The goal of the project is to investigate machine learning models for use in retail credit scoring, with a specific focus on:

- Transparent representation of machine learning models
- Stakeholder insights into so called “black-box” modelling

HIGH LEVEL DESCRIPTION OF PROBLEM

Predictive modelling is a process used in predictive analytics to create a statistical model of future behaviour. Predictive models are widely used as analytical tools in retail credit. Within the models to be considered, more traditional techniques exist but then also the so-called machine learning techniques. However, these techniques can be difficult to explain and interpret when making business decisions. The purpose of this project is to propose machine learning techniques that are stable, logical and easy to explain (i.e. transparent).

PROJECT OBJECTIVES

The following are important aspects in predictive modelling that requires further research:

- Interpreting the weights produced by machine learning models.
- Representing machine learning models in a way that are in line with regulatory requirements for credit scoring models.

OUTPUTS REQUIRED

The output required from this research study is a formal report, which discusses the different machine learning techniques and its applications within the predictive modelling field of finance. This report should also contain suggestions on improving interpretability of the weights produced by machine learning models.

STRATEGIC VALUE TO DIRECTED RISK RESEARCH

This research will increase insight into machine learning techniques as well as its application in the predictive modelling field of finance.