Non-Performing Loans create material cost for banks, as these require increased attention, and in some cases might even result in financial loss. Therefore, banks aim to prevent any credit event and seek to identify loans at risk as effectively and as efficiently as possible.

Retail portfolios, i.e. loans to individuals, are characterized through large number of loans and counterparties, which renders any manual loan by loan management economically inefficient.

Customer Collection Scorecards are sought to identify any form of cash-flow issue that would result in a credit event over a 10 day window and to determine the best response strategy.

For customer communication purposes, it would be desirable to have a model based on data science and machine learning approaches exploiting the vast amount of transaction data and demographic information, which periodically adjusts to changing patterns and translates into an easy to communicate scorecard. The goal of the thesis is to develop such a model in cooperation with XacBank.

**Requirements**: Selection of credit events and development of Customer Collection Scorecard, implementation and empirical validation of the implemented model.

**Prerequisites**: Background in data science and machine learning; programming skills. Willingness to travel for on-site work to Mongolia (flight cost covered and visa assistance provided).

For more information, please contact Prof. Eyke Hüllermeier (eyke@upb.de).

### About XacBank

Since its founding in 2001, XacBank has created sustainable growth in banking and financial sector of Mongolia, continuously expanding operations, and is one of the systemic banks.

XacBank’s vision is to become a preferred bank for a wide range of customers in the financial market providing financial solutions in the most convenient way being dedicated to its values of People, Planet and Prosperity and continuing to set high standards in corporate governance and social responsibility.

For more information, please refer to [https://www.xacbank.mn/page/about](https://www.xacbank.mn/page/about).