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Title: A Money Laundering Detector using Synthetic Data from a Mobile Money Service Simulation

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Abstract

Money laundering threatens the economic and social development of countries. The threat is due to the injection of illegal proceeds into the legitimate financial system. Due to the high amount of transactions and the variety of money laundering tricks and techniques, it is difficult for the authorities to detect money laundering and prosecute the wrongdoers. Thus, it is not only the amount of transactions, but the ever changing characteristics of the methods used to launder money that are constantly being modified by the fraudsters which makes this problem interesting to study.

We present a case study which is based on the domain of mobile money. This Mobile Money service has been running only in a demo phase. This situation unable us to collect any data that can be used for analysis of possible detection methods of illegal money. Our case study is based on the company AB¹. Company AB has developed a mobile money implementation that provides users with the ability to transfer money between mobile phone users by using the phone as a sort of electronic wallet. The task at hand is to provide a tool that detects suspicious money laundering activities.

The use of synthetic data for machine learning has implications. We present our ideas about how to address some of the difficulties raised by the lack of real data and illustrate our ideas by implementing a MABS for the case studied. We show an analysis of the difficulties and considerations of applying machine learning techniques to this domain. We discuss the pros and cons of using synthetic data and problems and advantages inherent in the generation of such a data set. Finally we propose an approach which is based on a Multi-Agent Based Simulation (MABS) for the generation of a synthetic data log for transactions.

1 The identity of the Company AB unfortunately cannot be disclosed