5. Summary

Credit card fraud detection (CCFD) is a challenging problem, which requires analyzing large volumes of transaction data to identify fraud patterns. The large volumes of data, together with the evolving techniques of fraudsters, make it impossible for human investigators to efficiently address this problem. In the last decade, CCFD has been increasingly complemented with computer algorithms known as *Machine Learning* (ML), which allows searching and detecting patterns from large amounts of data. ML algorithms have been shown to significantly improve the efficiency of fraud detection systems, and assist fraud investigators in detecting fraudulent transactions.

ML for CCFD has become an active research field. This is illustrated by a large number of publications on the topic and their promising claims. At the same time, caution should be addressed in interpreting the results of these publications. As was pointed out in Machine learning for credit card fraud detection, the field of ML for CCFD is relatively new, and there do not exist any recognized benchmarks, nor methodologies, to compare and assess the proposed techniques [MekterovicBrkicBaranovic18, PP19, ZAM+16].

This book aims at making a first step in this direction, by proposing reproducible implementations and baseline methodologies to address the topic of ML for CCFD. The proposed implementations and methodologies are based on our experience in the field, following our ten-year collaboration between the Machine Learning Group - University of Brussels and the Worldline payment processor company.

Previous
4. Machine learning for credit card fraud detection

Next
1. Introduction