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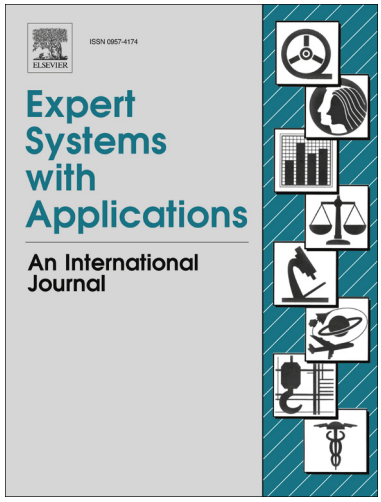

Learned lessons in credit card fraud detection from a practitioner perspective

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Learned lessons in credit card fraud detection from a practitioner perspective

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Abstract

Billions of dollars of loss are caused every year due to fraudulent credit card transactions. The design of efficient fraud detection algorithms is key for reducing these losses, and more and more algorithms rely on advanced machine learning techniques to assist fraud investigators. The design of fraud detection algorithms is however particularly challenging due to non stationary distribution of the data, highly imbalanced classes distributions and continuous streams of transactions.

At the same time public data are scarcely available for confidentiality issues, leaving unanswered many questions about which is the best strategy to deal with them.

In this paper we provide some answers from the practitioner's perspective by focusing on three crucial issues: unbalancedness, non-stationarity and assessment. The analysis is made possible by a real credit card dataset provided by our industrial partner.

Keywords: Incremental Learning, Unbalanced data, Fraud detection

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