
A Multi-Model Approach to Credit Card Fraud Detection

Sebastian Criado

Department of Computer Science
Brown University

Paul Krupski

Department of Computer Science
Brown University

Spencer Dellenbaugh

Department of Computer Science
Brown University

Abstract

Credit card fraud is a prevalent issue across many domains and there is a great potential for using Machine Learning as a defense. Due to the data intensive nature of credit card transactions, there are several feature points that can be used for making predictions. Transactional information can include values such as "distance from home", "distance from last transaction", and "repeated retailer" to name a few. In order to classify transactions as fraudulent or authentic, three different types of neural networks have been trained and tested on multiple datasets. The architectures include an RNN, a 1-dimensional CNN, and a Transformer. We also experiment with training these models with varying balances of fraudulent data.