Project Title: Deep Learning approach for detecting fraud in similar pattern credit card transactions.

Introduction: Nowadays credit cards payments is most popular modern financial transactions. It provides a convenient way to make purchases all over the world and financially flexible for users. In the meantime, the North American institutions losses $246 million and globally almost $35 billion by credit cards fraud. Currently, a lot of financial security-based institutions try to find out how to protect fraud credit card transactions.

The fraud payments detection success rate is significant in the anomaly detection model when hackers purchase history differs from credit card holders' purchase patterns. But when the hackers' buying patterns are similar to card holders, then the model does not detect perfectly. My idea is improving the fraud detecting model that the predictive model assumes it's a suspicious activity when hackers use credit card for similar type purchases as like as card holders and send a fraud detection email to card holder.

It is important because a significant number of individuals do not check credit card transactions history every day. In that case, if the fraud detection model does not find out fraud payment activity correctly, then the model will not send the suspicious message to the card holder. Subsequently, this will be an enormous loss of individuals and also institutions.

Work Plan: I will collect credit card fraud records dataset and clean the data by handling missing values, outliers, and inconsistencies. Then I find out appropriate fraud detection deep learning model based on dataset and the specific requirements of the fraud detection task.

Moreover, I will train the selected model using training data and continuously check model performance. After that, evaluate the trained model and find out if there are any common types of error. Then I try to find out optimization of the model. Finally, implement real-time monitoring of detecting fraud pattern and continuously update the model.