**CREDIT CARD FRAUD DETECTION IN REAL TIME USING MACHINE LEARNING**

**BY**

**OMONIYI VICTOR OLALEKAN**

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**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) OF CHRISLAND UNIVERSITY, ABEOKUTA**

**DECLARATION**

I, **OMONIYI VICTOR OLALEKAN**, do hereby declare that this project work is entirely my work and composition. The work embodied in this project has not been submitted in candidature for any degree and is not currently being submitted for any degree. All references made to works of other persons have been duly acknowledged.

NAME OF STUDENT: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SIGNATURE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CERTIFICATION**

This is to certify that the research work was carried out by **OMONIYI VICTOR OLALEKAN** in the department of Computer Sciences, College of Natural and Applied Sciences, Chrisland University, Abeokuta The research work is considered adequate in partial fulfilment of the requirements for the award of B.Sc in Computer Science.

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**Dr(Mrs) Odeniyi** **Date**

Project Supervisor

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**Dr (Mr) Agbeyangi**  **Date**

Head of Department

**DEDICATION**

This paper is dedicated to the Almighty God, without whose grace and love this paper would not have been written.

This work is also dedicated to my dear parents, Mr. and Mrs. Omoniyi, for their financial support and parental affection. May the Lord shower you with many blessings and grant you whatever your heart desires.

**ACKNOWLEDGEMENT**

To God be the glory for the grace to begin and complete this project, my heartfelt thanks go to my project supervisor, Dr. (Mrs) Odeniyi, without whom this project would not have been possible. I am grateful to her for her direction, corrections, and invaluable suggestions throughout the project's duration Thank you very much, ma.

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**ABSTRACT**

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**CHAPTER ONE**

**INTRODUCTION**

* 1. **Background to the study**

The use of credit cards for online transactions has expanded tremendously as a result of the development and quick expansion of E-Commerce, resulting in an explosion in credit card fraud. As credit cards become the most common method of payment for both online and offline purchases, incidences of credit card fraud are on the rise.

Credit card fraud is defined as the unauthorized use of a credit card accomplished by the theft of the cardholder's personal information. Over the years, credit card fraud has been a major threat. In comparison to 2018, the number of reports increased by 72.4% in 2019. Furthermore, credit card fraud was the most prevalent sort of identity theft in 2019, according to credit card theft data, with over 270,000 cases. In 2015, 34.8% of credit card fraud reports were made, compared to 66.2% in 2016.

Credit card theft cost the globe around $30 billion in 2019. In the next years, this number is expected to skyrocket. Furthermore, according to global credit card fraud data, serious losses from card fraud will reach $40 billion by 2027.

According to 2018 debit card fraud figures, 60–69-year-olds reported 129,448 fraud instances. With 21,904 reported fraud incidents, 19-year-olds and under were the least impacted.

According to the Australian Payments Network, the five most common kinds of credit card fraud are Card-not-present (CNP) fraud, Counterfeit and skimming fraud, Lost and stolen card fraud, Card-never arrived-fraud and False application fraud. This study tries to address the fraud natures indicated above in the CNP fraud category and, as a result, presents a solution to identify those frauds in real-time.

* 1. **Problem statement**
  2. **Aim and Objective of the study**

The study's aim is to

* 1. **Significance of the study**
  2. **Scope of the study**
  3. **Definition of Terms**
  4. **Organization of work**

The body of the work is structured as follows:

The second chapter is a survey of similar research that investigates the use of machine learning techniques in finance. The application of support vector machines and other machine learning techniques in the financial services industry, as well as the detection of fraud

The third chapter discusses the project's concept and describes the algorithm used in this effort. It describes the decision support system's design.

The fourth chapter explains the dataset, the implementation of the

algorithm used in the chapter, the datasets, and the results and interpretation of the results.

The fifth chapter finishes the work by making recommendations for future efforts and outlining the overall contribution to knowledge.

There is also a list of references.

**CHAPTER TWO**

**Literature Review**

**2.0. Overview**

This chapter offers a review of past work related to the current study.

**2.1. Scholarly definition of terms**

**2.2 Machine Learning in Finance**

AI is beneficial to fraud detection because ML algorithms can analyze millions of data points to detect fraudulent transactions that would tend to go unnoticed by humans. (Buchanan, 2019). Simultaneously, ML improves the precision of real-time approvals while decreasing the frequency of incorrect rejections. Fraud detection today entails more than a risk factor checklist. Fraud detection systems may now actively adapt and adjust in response to new possible (or real) security risks using machine learning approaches. Banks' systems can use ML to discover unusual actions or behaviours ("anomalies") and flag them for further investigation.

**References**

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