**A MACHINE LEARNING MODEL AND IMPLEMENTATION FOR PRODUCT SENTIMENT CLASSIFICATION**

**CASE STUDY OF**

**(NIGERIAN TECHNOPRENEURSHIP)**

**BY**

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**A PROJECT SUBMITTED TO THE DEPARTMENT OF SOFTWARE ENGINEERING, FACULTY OF COMPUTING, BAYERO UNIVERSITY KANO.**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) DEGREE IN SOFTWARE ENGINEERING**

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**CERTIFICATION**

This is to certify that this project titled “ A Machine Learning Model And Implementation For Product Sentiment Classification” conducted by Tolu John has been carefully read and approved, having satisfied the requirement for bachelor of science in software engineering, in the department of software engineering, faculty of

Computing, Bayero University, Kano.

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**DEDICATION**

This project report is dedicated to the Father of creation( God) for his numerous and glorious blessings, protection, provisions and guidance over me throughout the period I was undergoing this project and to whom am indebted with gratitude my mum Mrs Gbekeleoluwa .E John and also my freedom fighter late. Mr Ayodele Alemede. I can not forget these precious soul for the supporters which are Mr Philip Alemede And Dr, MS Kolawole.

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***ABSTRACT***

Product Sentimental Classification is computation study of people’s opinions, sentiments, attitudes, and expressed in written language about a product.

In the recent years, e-commerce has experienced huge and rapid development. As a result, online purchasing has grown, and has led to growth in online customer reviews on products. The implied opinions in customer reviews have a massive influence on customer's decision purchasing, since the customer's opinion about the Product is influenced by other consumers' recommendations or complaints. This research aims to perform analysis on the e-commerce company’s reviews dataset and studies sentiment classification with different Machine Learning approaches. First, the reviews shall be transformed into vector representation using different Techniques, I.E., Bag-Of-Words and Tf-Idf. Then, we Trained Various Machine Learning Algorithms, I.E., KNeighborsClassifier, DecisionTreeClassifier, Naïve Bayes and MultinomialNB, just to get best performing algorithm. Therefore, the project aim to simplify the analysis of reviews by introducing graphical representation of sentiments to each product and, with the help of API which will be able to accept database file containing related data to product and comments.