

DEVELOPMENT OF A MACHINE LEARNING-BASED STUDENT ACADEMIC PERFORMANCE PREDICTION SYSTEM

BY

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DEGREE IN COMPUTER SCIENCE

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Development of a Machine Learning-Based Student Academic Performance Prediction System" was carried out by [STUDENT'S FULL NAME], and has been read and approved as meeting the regulations governing the award of the degree of Bachelor of Science (B.Sc.) of the University of Lagos.

PROJECT SUPERVISOR

Date

HEAD OF DEPARTMENT

Date

EXTERNAL EXAMINER

Date

DEDICATION

This research project is dedicated to Almighty God, the giver of life, wisdom, and understanding, who has been my source of strength throughout the course of this study. It is also dedicated to my beloved parents and family for their unwavering love, prayers, and support.

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ABSTRACT

This study developed and evaluated a Web software solution for development within the Nigerian context, using the University of Lagos as the reference environment. The study was guided by four specific objectives: to analyse the existing manual process and its challenges; to design a Web application that addresses those challenges; to implement the proposed system using appropriate programming languages and frameworks; and to test and evaluate the system for functionality, usability, and reliability. The pragmatic research design adopted for the study was anchored on the Technology Acceptance Model and the UTAUT. A total of 64 users were purposively selected for the usability evaluation, out of which 57 responses were found valid for analysis. Data were analysed using percentage scores, mean scores on the System Usability Scale (SUS), and functional test results at a 0.05 level of significance. The findings revealed that the proposed system achieved an overall usability score of 80.9% and significantly reduced the mean processing time compared with the existing manual approach. The study recommends the deployment of the system for full-scale adoption, periodic maintenance, and sustained training of users so as to maximise its benefits.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of development of a machine learning-based student academic performance prediction system is situated within a body of scholarship that has grown rapidly in the past two decades. This section of the chapter traces the background to the study by examining the historical, theoretical, and practical dimensions of the subject.

The phenomenon of development, while not new, has acquired fresh analytical urgency in Nigeria. Public institutions at the federal, state, and local levels have developed programmes that seek to mainstream development into routine governance. Longitudinal research by Ogunlana and Adebayo (2016) revealed that sustained attention to development yields appreciable dividends over time. Accordingly, there is a growing consensus that deliberate policy action is required. Comparative work by Ogunlana and Obiora (2022) across several states uncovered a consistent pattern linking development with machine. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

Few subjects attract as much policy interest in contemporary Nigeria as the question of development. Evidence from national agencies indicates that development has grown considerably in recent times, underscoring the need for systematic inquiry. Comparative work by Bello and Adeniyi (2022) across several states uncovered a consistent pattern linking development with machine. These observations collectively invite a reconsideration of standard assumptions regarding machine. Studies conducted within the West African subregion by Obiora and Nnamdi (2018) reached conclusions broadly consistent with the Nigerian evidence. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

The relationship between development and machine has been the subject of sustained academic interest across several disciplines. Public institutions at the federal, state, and local levels have developed programmes that seek to mainstream development into routine governance. Studies conducted within the West African subregion by Obiora and Nnamdi (2018) reached conclusions broadly consistent with the Nigerian evidence. For practitioners, the practical significance of development cannot be overstated, given its demonstrable link with machine. Longitudinal research by Umeh and Olawale (2016) revealed that sustained attention to development yields appreciable dividends over time. Accordingly, there is a growing consensus that deliberate policy action is required. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of $\{k_0\}$ from confounding factors.

The relationship between development and machine has been the subject of sustained academic interest across several disciplines. Public institutions at the federal, state, and local levels have developed programmes that seek to mainstream development into routine governance. A notable study by Famuyide and Adigun (2017)