# DESIGN AND IMPLEMENTATION OF AN INTELLIGENCE BASED SYSTEM FOR STUDENTS PERFORMANCE EVALUATION.

BY

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DEPARTMENT OF COMPUTER SCIENCE

FACULTY OF PHYSICAL SCIENCES

NNAMDI AZIKIWE UNIVERSITY

AWKA

OCTOBER 2025

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A PROJECT SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE, FACULTY OF PHYSICAL SCIENCES, NNAMDI AZIKIWE UNIVERSITY, AWKA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

OCTOBER 2025

# **CERTIFICATION**

I, OKAFOR CHINAZA MARK with registration number 2021514018 hereby certify that I am responsible for the work submitted in this project and that this is an original work which has not been submitted to this University or any other institution for the award of a degree or diploma.

|  |  |
| --- | --- |
| Signature of Candidate | Date |

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# **APPROVAL**

This project written by OKAFOR CHINAZA MARK has been examined and approved for the award of bachelor degree of Nnamdi Azikiwe University, Awka.

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# **DEDICATION**

I dedicate this work to the Almighty and also to my loved ones, and to my parents whose unwavering support, love, encouragement and sacrifices have been a strong anchor in my educational journey and life.

# **ACKNOWLEDGEMENT**

This work would not have been successful without some important individuals. Therefore, I wish to acknowledge the profound contributions of those who helped in the success of this work.

Firstly, my gratitude goes to the Almighty God for the grace and strength to follow through with this project.

My sincere gratitude goes to my supervisor, Dr. I. E. Onyenwe for the time he spent in making sure that my work was very good even though he was very busy. His guidance and corrections were of great help to me.

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I would also like to express my heartfelt appreciation to my parents for their unwavering support and encouragement. Their moral and financial support have brought me this far.

Lastly, I would like to thank my friends and family for their support and encouragement throughout this project. Their understanding and patience have been a source of strength and motivation.

# **Abstract**

# The evolution of educational assessment methodologies has highlighted significant limitations in traditional evaluation systems, including fragmented data management, time-intensive manual grading processes, and the inability to provide timely, personalized student feedback. This research addresses these challenges through the design and implementation of the Intelligent Student Evaluation System (ISES), an AI-powered platform that transforms conventional assessment practices into a unified, data-driven educational ecosystem.

# The system employs a modern full-stack architecture utilizing React.js with TypeScript for responsive frontend interfaces, Laravel PHP framework for robust backend services, and PostgreSQL with Supabase for scalable data management. ISES incorporates role-based access control, providing tailored dashboards for students, instructors, and administrators, each optimized for specific educational workflows and requirements. The implementation follows containerization principles through Docker, ensuring consistent deployment across various environments while maintaining system reliability and performance.

# Key achievements include the successful development of a secure multi-role authentication system using Laravel Sanctum, creation of intuitive user interfaces supporting diverse educational stakeholders, establishment of a scalable database schema ready for AI integration, and comprehensive documentation supporting system reproducibility. The platform demonstrates how educational technology can bridge existing gaps in assessment practices by providing centralized data management, automated processing capabilities, and foundation for predictive analytics.

# While the current implementation focuses on establishing the core platform infrastructure, the architecture is specifically designed to accommodate future AI components for automated grading, learning analytics, and personalized feedback generation. The system represents a significant advancement in educational technology by providing institutions with a scalable, maintainable solution that enhances assessment efficiency while supporting improved learning outcomes through data-informed educational practices.

# This research contributes to the field of educational technology by demonstrating the effective application of modern web technologies in addressing persistent challenges in academic assessment, while providing a flexible foundation for future innovations in AI-enhanced educational tools and learning analytics.

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