

# MODEL PREDICTING POSTGRADUATE STUDENTS' PERFORMANCE USING DATA MINING TECHNIQUES



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### INTRODUCTION

The academic performance of students is a key factor in making institutions stand out and it also determines how students enroll into the school. In order to give quality education which leads to good performance from students, the tutors need to know the academic ability of their students. Hence, educational managers can make strategic decision to improve students' performance.

# **OBJECTIVES**

- Determine the set of attributes contributing towards postgraduate students' academic performance
- Develop a model using the set of attributes
- Generate rules from the model for strategic decision making by educational managers.

# MATERIALS USED

1102 records of Computer Science Postgraduate masters students' data over a period of 5years was collected from the Postgraduate ICT unit and Computer Science records office of the University of Ibadan. Waikato Environment for Knowledge Analysis (WEKA) open source ML software was used for analysis.

The dataset was later reduced to 183 records after the dataset was pre-processed before it was fed into WEKA.

#### METHODOLOGY Data Gathering Data Pre-& Preparation processing Attribute Selection Data Formatting Data Transformation Model Development Train and Test Data Evaluate Optimal model using Decision Algorithm Tree Algorithms Generate Rules Balancing of **Attribute Selection** Dataset On the Extended Choose Click Choose On Select Choose Search Attribute Weka Selection Start Attributes Tab valuator (On Method WEKA Mode at a time) Button Click on **Preprocess** Tab Choose Filter (Smote-Choose ENN) **Select Classify** Algorithm Cross ClicK on start WEKA (One at a Validation button Tab time) Click Apply

### RESULTS



## CONCLUSION

This research concludes that previous undergraduate grades, type of undergraduate school, age on admission, session resumed and O/L physics grade can predict postgraduate students' academic performance and that RandomTree classifier will produce a better predictive model.