



**The College of Graduate Studies and the College of Information Technology  
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Master Thesis Defense**

Entitled

*DATA-DRIVEN MODELING OF STUDENT PERFORMANCE IN THE TIME OF DISTANCE LEARNING*

by

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Abstract

One of the important aspects that all academic institutions work towards improving is Student Performance. It is obviously the primary indicator of success or failure of institutions. Student performance predictions are vital to instructors and educational decision makers to help, across all levels, tailor learning according to the students' needs. Therefore, it is essential for Higher Education Institutions to predict student performance in distance learning which has been, and remains, the primary method of learning in some countries due to Corona Virus pandemic. For this reason, this research is going to predetermine a fitting definition of student performance in time of distance learning by surveying literature and collecting new effective factors affecting students' performance. New concepts and attributes are discovered and considered in the new definition. Furthermore, a primary objective of this thesis is to build a prediction model for student performance during distance learning, where the new definition and its subsequent attributes are considered. The data-driven model is empirically validated, and the obtained results show the outperformance of our proposed approach; particularly the appropriateness of the introduced student performance definition as well as the machine learning based technique from which the student performance prediction model is derived. We strongly believe that such a model will benefit the educators and guide them on how to accurately make decisions based on student performance in the distance learning settings.

**Keywords:** Student Performance, Distance learning, Online Learning, Machine Learning