**CCT College Dublin**

**Assessment Cover Page**

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| **Module Title:** | Machine Learning for Business |
| **Assessment Title:** | CA1 Project |
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| **Assessment Due Date:** | 21/04/2024 |
| **Date of Submission:** | 21/04/2024 |

**Declaration**

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| By submitting this assessment, I confirm that I have read the CCT policy on Academic Misconduct and understand the implications of submitting work that is not my own or does not appropriately reference material taken from a third party or other source. I declare it to be my own work and that all material from third parties has been appropriately referenced. I further confirm that this work has not previously been submitted for assessment by myself or someone else in CCT College Dublin or any other higher education institution. |

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# **Introduction**

A global trend in pedagogical approach, known as Massive Open Online Courses (MOOCs), serves as an alternative and supplement to traditional models of learning by utilizing online platforms (Sharma, 2013, p.19). It provides high-quality educational content that students worldwide can access more quickly and easily (Thuy et al., 2023, p.1-2).

Since 2012, numerous platforms have emerged for online education, among which Coursera stands out as the most popular due to its variety of courses and strong partnerships with prestigious higher educational institutions like MIT, Harvard, and Stanford (Sharma, 2013, p.19; Zotova et al., 2021, p.167).

## Motivation

During the pandemic period, MOOCs experienced a significant increase (Serravallo, 2020, p.1). This market is estimated to reach USD 22.8 billion this year, with an expectation of USD 119 billion by 2029 (www.mordorintelligence.com, n.d.), making it a lucrative investment opportunity. According to this source, the Coursera platform experienced a 640% increase during the pandemic compared to the previous period.

## Problem Domain

## Objectives

## Why this dataset?

https://www.kaggle.com/datasets/elvinrustam/coursera-dataset

## Word count

# **Clustering Algorithms**

Which clustering algorithms would you consider for segmentation, and why? Explain the differences between silhouette score and Davies-Bouldin index in the context of clustering. Compare the results obtained from any two clustering algorithms from the chosen dataset.

## Ttttt1

## Tyyy2

# **ARMA / ARIMA model – Time Series Data**

What insights can you derive from the initial exploration of the time series data based on the provided topics? Describe any trends, seasonality, or anomalies observed. How did you determine the appropriate parameters (p, d, q) for the ARIMA model. Evaluate the performance of the ARIMA model in forecasting future values, highlighting any strengths and limitations based on your chosen dataset.

# **Assessment**

# **Conclusion**

# **References**

Thuy, T., Thanh Tu Tran, Gia Khuong An and Nguyen, P. (2023). Students’ Perception Towards Learning Massive Open Online Courses on Coursera Platform: Benefits and Barriers. *International Journal of Emerging Technologies in Learning (ijet)*, 18(14), pp.4–23. doi:https://doi.org/10.3991/ijet.v18i14.39903.

Sharma, R.C. (2013). How to Offer a Massive Open Online Course (page 19-20). *EduComm Asia*. [online] Available at: https://www.academia.edu/5505040/How\_to\_Offer\_a\_Massive\_Open\_Online\_Course\_page\_19\_20\_. [Accessed 16 Mar. 2024].

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Serravallo, J. (2020). Connecting with students online : strategies for remote teaching & learning. Portsmouth, New Hampshire: Heinemann.

www.mordorintelligence.com. (n.d.). Massive Open Online Course (MOOC) Market | Growth, Trends, and Forecasts (2020 - 2025). [online] Available at: <https://www.mordorintelligence.com/industry-reports/massive-open-online-course-mooc-market>. [Accessed 17 Mar. 2024].