

Dublin Business School Assessment Brief

Assessment Details

Module Title:	Machine learning
Module Code:	
Module Leader:	Abhishek Kaushik
Stage (if relevant):	
Assessment Title:	CA1, CA2
Assessment Number (if relevant):	2
Assessment Type:	CA
Restrictions on Time/Length:	CA1 (2500 words) CA2 (2500 words)
Individual/Group:	Individual
Assessment Weighting:	CA1=30% CA2=30%
Issue Date:	CA1- 21-09-2020, CA2-21-09-2020
Hand In Date:	CA1 21-10-2020, CA2 21-11-2020
Planned Feedback Date:	After one week from the submission date
Mode of Submission:	Digital

Assessment Task

CA 1: (30%)

Q1 Define the following. (3*5=15 marks)

- Define AI, Machine learning and Deep learning (70-100 words).
- Define Parametric and Nonparametric models (70-100 words).
- Define Supervised learning and its components with examples (70-100 words).
- Define Unsupervised learning and its components with examples (70-100 words).
- What are the common types of error in Machine learning (70-100 words)?

Q2 Please solve the case study (2.5*4=10 marks) (1000 words)

The purpose of this assignment is to build your machine learning project plan. For this exercise, you can draw on your own experience and work situation, use any one of the example scenarios provided with a completely fictitious example of the problem. You will be developing a strategic plan for machine learning adoption within this company, and eventually proposing a structure for a successful machine learning project. You will start by describing your current overall state of machine learning readiness. You will then explain the business outcome your project is driving towards, and how business success will be evaluated. You will describe, at a high-level, what machine learning project you wish to undertake. Finally you will outline the risks of this approach, in relation to your stage of readiness and the scope of the project.

Select any-one of them

- You are in the social media division of a political party, and you want to keep better track of the party's profile and reputation online.
- You are the head of the Corporate clients division of a major health service provider chain, and you want corporate health applications decided faster and better.
- You are a software designer and you want to use ML to improve the user experience.

Answer the following questions

- 1) Provide a brief description of your company, industry, or business.
- 2) What business outcome are you supporting with your machine learning project? How is this outcome relevant and important for the company? How will you evaluate whether the desired outcome is being achieved?
- 3) What machine learning project will you propose to support this business outcome? At a high level, what will your machine learning model be doing? Make the case that this is a viable project (at least in theory) and relates to your overall business goals.
- 4) Given the state of readiness you have described and the scope of the project you're proposing, is this a risky project, broadly speaking? That is, is it appropriate to the stage your company is at or will it provide particular challenges?

Q3 Please write the summary of the journal paper you read and explain about the machine learning techniques you learn from the journal and what are the advantage and disadvantage of the application discussed in the research project. (1000 words) (5 Marks)

CA 2: (30%)

Q1 Define the following (4*3 marks)

- Define Data sampling and its steps with examples. (200 words)
- Define Decision tree, Information gain and Entropy. (200 words)
- Define Chinese restaurant algorithm and Agglomerative Hierarchical Clustering with example. (200 words)

Q2 Program the following (9*2) (1800- 1900 words)

Please select any data from <https://data.fivethirtyeight.com/> which is appropriate according to you and build the following model.

- Regression model
- Classification model

Please share your code (Python) and report in CA2 link. In the CA2 report (1800-1900 Words), please justified the use of algorithm and data set. Please approve the dataset from your Class instructor before starting the CA. The report of CA2 should include justification of Q1 and Q2 (Take away from the Task).

Plagiarism is strictly prohibited. Any sort of plagiarism can lead you to detained in the class.

General Requirements for Students:

1. A proportion of assessment marks is allocated to presentation. All assignments must be word-processed, with word count noted unless otherwise stated by the lecturer.
2. Where a hardcopy submission is required, an Assignment Submission Form must be securely attached to each submission.
3. All assignments must be submitted no later than the stated deadline.
 - Assignments submitted after the latest deadline (date and time) specified, including any extension, are deemed to be 'late' and are penalised, as follows:
 - Where the assignment is submitted not more than seven working days after the latest specified date, the mark awarded to the assignment is reduced by 25%.
 - Where the assignment is submitted more than seven working days after the latest specified date, it is awarded a mark of zero
 - Where the assessment is undertaken in a group, the piece of work should be submitted in its complete entirety, and any penalty for late submission incurred applies to all group members.
4. All relevant provisions of the Assessment Regulations must be complied with.
5. Extensions to assignment submission deadlines will be not be granted, other than in exceptional circumstances. To apply for an extension please go to <http://www.dbs-students.com/Registrar/> and download the Assignment Extension Request Form. *Once completed this form should then be returned to your Programme Leader, for approval.*
6. Students are required to retain a copy of each assignment submitted, and the submission receipt (If a physical submission is required) until the issuing of a transcript indicating the mark awarded.
7. Assignments must be appropriately packaged and presented.
8. Where a submission involves digital media, it is the submitting students' responsibility to ensure the media is appropriately labelled, fully working and they must retain a copy.
9. Assignments that *breach* the word count requirements will be penalised. *There is a 10% discretion, either way, applicable in terms of word count.*
10. Students are required to refer to the assessment regulations in their Student Guides and on the Student Website.
11. Dublin Business School penalises students who engage in academic impropriety (i.e. plagiarism, collusion and/or copying).
12. To prevent plagiarism please follow this link to the Harvard (delete as appropriate) Style Referencing Guide - all referencing is required in this format.

http://issuu.com/dbslibrary/docs/harvard-referencing-guide/1?mode=a_p

(Guide on referencing is also available under DBS library guides at www.library.dbs.ie)

13. In relation to electronic submissions:

- A. All assignments should be submitted to your subject/course page on Moodle by the deadline date.
- B. It is the student's responsibility to ensure their file is uploaded correctly.
- C. When an assignment is submitted, it is the student's responsibility to ensure that the file is in the correct format and opens correctly.
- D. When you submit your assignment you will be asked to click on a button which will declare the following:

By submitting this assignment I confirm that I am aware of DBS's policy regarding cheating, plagiarism and all other forms of academic impropriety. The coursework submitted is my own or my group's work, and all other sources consulted have been appropriately acknowledged. I am aware that in the case of doubt an investigation will be held.

E. Include an electronic **cover sheet** with the following details to the front of the assignment:

Electronic Assignment Cover sheet

Please fill out and attach as the first page of Assignment.

Student (s) Number as per your student card:

Course Title:

Lecturer Name:

Module/Subject Title:

Assignment Title:

No of Words:

Note: Technical support is available to student between **0930- 1700 hrs only**. There is no technical support after 1700 hrs. It is your responsibility to ensure that you allow time to troubleshoot any technical difficulties by uploading early on the due date.