

Assessment Details

Assessment Task – Total Marks: 100 – Weighting: 60%

Task 1

Using the following dataset, create a decision tree using the **entropy**.

Suppose the following dataset is about the properties of 14 people where the attribute “Default” shows whether a person will default on their credit card. The attribute “Default” is the dependent attribute with two values (default = 'yes', default = 'no'). Each person has 4 features, and you want to find out how these features are going to help whether a person will default on their credit card.

- a) Which one of these features is the most important feature?
- b) What is the best Information Gain (IG)?

	Age		Income		Student	Credit_rate	Default
0	youth	high	no	fair	no		
1	youth	high	no	excellent	no		
2	middle_age	high	no	fair	yes		
3	senior	medium	no	fair	yes		
4	senior	low	yes	fair	yes		
5	senior	low	yes	excellent	no		
6	middle_age	low	yes	excellent		yes	
7	youth	medium	no	fair	no		
8	youth	low	yes	fair	yes		
9	senior	medium	yes	fair	yes	10 youth medium yes excellent	yes
11	middle_age	medium		no	excellent	yes	
12	middle_age	high	yes	fair	yes		
13	senior	medium		no	excellent	no	

Task 2**(30 Marks)**

Using the hand gestures dataset available, create a hand gesture recognition app in Python. Apply at least three classifiers and compare their performance. Save your Anaconda/Google Colab Notebook in this format:

Your_Name_StudentNumber_GestureRECOGNIZE.ipynb

Document your code and give full explanation about what each block of code does.

(60 marks)

Your Learning - 400 words

(10 marks)

You should create a pdf file with task 1 and your overall learning from this assignment mentioned in it.

Your codes should be in a zip folder. It should be submitted separately.

Submission

Task1_Learning_Firstname_Surname.pdf

Zippered folder should be named as – Firstname_Surname.zip

Assessment Criteria

Each part will be graded according to the following criteria:

1. Quality of code (correctness and completeness) [Weightage – 40%]
2. Quality of documentation of code (explanation of each part of code and interpretation of results) [Weightage – 60%]

Note: Your work must not be copied. In case of any evidence of copying you will get 0 marks.

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.
4. All relevant provisions of the Assessment Regulations must be complied with.
5. 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.
6. Assignments must be appropriately packaged and presented.
7. 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.
8. Assignments that *breach* the word count requirements will be penalised. *There is a 10% discretion, either way, applicable in terms of word count.*
9. Students are required to refer to the assessment regulations in their Student Guides and on the Student Website.
10. University penalises students who engage in academic impropriety (i.e. plagiarism, collusion and/or copying).
11. 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 University 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: