

Assignment 2022/2023-1

BENR 4713 ARTIFICIAL INTELLIGENCE

- Each group is required to design and simulate a Python code based on the topics given in Table 1. You are free to choose your case study.
- Groups with the same topic should not have the same case study.
- The marks will be given based on the complexity level of the selected case study, the working Python code, and the technical report's content (refer to Table 2 and Rubric).
- Write a technical report using the IEEE-paper template (provided in ulearn) with maximum **SIX (6)** pages. All reports must be attached with the assignment cover, an Appendix consisting of the Python code (each line should have a comment) and the Python code link.
 - Please attach a Turnitin report to ensure no plagiarism. Your Turnitin report should be less than 20%.
 - Your Results and Analysis section should have relevant performance metrics, for example, F1-score, Recall, Precision and confusion matrix.
- Please provide a FULL VIDEO (access link) that consist of:
 - Demonstration of running the code with the subject Title: OWN PROJECT TITLE.

Table 1: The topic assigned to each group

Group	Topic
G1, G4, G7, G10	Particle Swarm Optimization (PSO)
G2, G5, G8	Genetic Algorithm (GA)
G3, G6, G9	Natural Language Processing (NLP)

Table 2: Marks distribution

No	Section	Marks
1.	Title	5
2.	Abstract	5
3.	Introduction	5
4.	Theory	5
5.	Methodology	10
6.	Result and Analysis	10
8.	Discussion and Conclusion	5
9.	References	5
10.	Clarity of video demonstration	5
11.	The complexity of case study	5
12.	Workable of code	5
Total		65

Description	Very Weak (1)	Weak (2)	Modest (3)	Good (4)	Excellent (5)
Title	The title of the case study is too general	The title includes method only.	The title includes the case study only without method.	The title for the case study is too general but have method	The title includes the case study and the method used
Abstract	Have objectives only	Have: objectives and idea,	Have: objectives, idea, and procedure/method	Have: objectives, idea, procedure/method, and results..	Have: objectives, idea, procedure/method, results and implication.
Introduction	Introduction does not link and meet the requirement	The introduction lacks of three components.	The introduction lacks of two components.	The introduction lacks of one component.	The introduction should have these components: General statement, Problem Statement, Objectives, proposed approach and Structure of the paper
Theory	No theory	3 theories missing	2 theories missing	1 theory missing	All related theories are explained
Methodology	No flowchart	Did not explain three elements in the flowchart.	Did not explain two elements in the flowchart.	Did not explain one element in the flowchart.	Have flowchart and explanation of each elements in the flowchart.
Results & Analysis	No graph or table.	The results have graph and table without explanation	The results have graph and table with lack of explanation	The results have graph, table but lack of one performance metric either F1-score, Recall or Precision.	The results have graph, table and relevant performance metric such as F1-score, Recall, Precision and confusion matrix
Discussion & Conclusion	Discussion & conclusion does not link and meet the requirement	Discussion & conclusion does relate but meets minimal requirement.	Discussion & conclusion does relate and meets most of the requirement	Discussion & conclusion does relate and meet all the requirements most of the time	Discussion & conclusion fully relate and meet the requirement all the time
References	Less than 2 references	3 or 4 references	5 references	7 references	More than 10 references
Clarity of video demonstration	Poor pronunciation all the time and the voice are either too loud or too soft. Only a part of line of code is explained.	Poor pronunciation every now and then the voice is either too loud or too soft. Only a part of line of code is explained.	The voice is just right but still occasional poor pronunciation. Only a part of line of code is explained.	The voice varies to add emphasis and interest with good pronunciation most of the time. Only a part of line of code is explained.	The voice and pronunciation are excellent all the time. Each line of code is explained.

Complexity of case study	The case study solves a basic function.	The case study solves a complex function.	The case study relates with excel file.	The case study uses well-known image files.	The case study relates with complex image.
Workable of code	The code does not work.	The code works perfectly. Most of the line of codes are not commented.	The code works perfectly. Half of the line of codes are not commented.	The code works perfectly. Only part of the line of codes are not commented.	The code works perfectly. All line of codes are commented.