

IRR_CW1_EXAMPLE2_No.B1771 07

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IRR CW1

Exam No. B177107

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1 Instructions

The process you should follow in completing this coursework is:

1. Look at the four Past IRR papers that are identified with a double asterisk (**) and pick the one that interests you most.
2. Read the rubric attached to this document. This describes the three criteria you will be using to grade your chosen IRR and for each criterion four grades are identified:
 - Unacceptable
 - Fair
 - Good
 - Excellent

Notice that this is a very coarse-grained approach to grading. This is because we believe this is about as fine as we can go and make meaningful distinctions. When IRR was first initiated it was on a Pass/Fail basis. The grading scheme is intended to provide more structured feedback so it is important you understand it and that is the purpose of this coursework.

3. Now read your chosen past IRR to review. As you read keep in mind the three criteria: Topic, Content, and Organisation that you are considering in the review. When something strikes you as good or bad in relation to these criteria make a note of it for future reference.
4. Once you have finished reading go back to the rubric and for each of the criteria make a decision on how you rate your chosen IRR against the grading criteria. Then edit this template to record your observations. It is fine to use bullet points. The justification part can include both positive and negative points. The points for improvement should generally notice a deficiency or potential improvement and suggest to the author what they might do to take account of your observation.
5. Once you have completed your edit of this document, then review what you have written to see that your observations are accurate.
6. Once you are happy with your work you are ready to submit.

2 Your Report

This is the section you should edit to form the report on the past IRR example you have chosen to review. This is intended primarily as a check that you understand what is expected of you in the IRR course and to gain credit for that understanding. **Length** is unimportant. We are not expecting a very lengthy report. Most of these example IRRs are very good or excellent work so do not worry if your report is quite positive, for many of these reports this is what we would expect.

2.1 Review of: IRR Example 2

Topic Selection: In this section you are considering the quality of the topic selection. You should read the rubric and see which of the four grades the Topic Selection in your chosen IRR matches best.

Grade: Excellent

Justification: The choice of topic has the following highlights that justify an excellent grade:

- Directly introduce two methods of reinforcement learning which are the main methods in the review.
- The focus of topic has been narrowed in the field of games.
- The notion of *model-based reinforcement learning* and *model-free reinforcement learning* is clearly defined using examples and experiment results in the review.
- The topic of the paper is clearly defined and illustrated with three sections in further review.

Points for Improvement: There are several minor points for improvement:

- In addition to introducing and comparing the two methods of deep reinforcement learning in games, the focus of this review is to introduce the MuZero algorithm in detail. So it would be better if MuZero algorithm could be emphasized in the title.

Content: In this section you are considering the quality of the content. Again, look at the rubric for the content criterion and choose a grade that best matches what you have read.

Grade: Good

Justification: The content has some characteristics that deserve a good grade:

- The introduction part introduces the background of reinforcement learning in detail, and also introduces four elements and compare two methods, which makes the concept easier to understand.
- Section 2.1 provides a good synthesis of the content of Model-free deep reinforcement learning in a visually rich game. Gradually introduce concepts of DQN, Rainbow, R2D2 and compared them graphically, which more readable to the audience.
- Sections 2.2 provides three examples to illustrate the use of model-based deep reinforcement learning in two-player turn-based games and leads to a conclusion which will be improved in the next section.
- Section 2.3 provides a synthesis of the content of MuZero algorithm. This algorithm combines the advantages of the above two algorithms.
- The summary and conclusions section provides a good summary of the small conclusions above through comparison.
- The paper provides cohesive examples and solid evidence which are strongly related to the topic.
- The summary and conclusions parts also propose two potential research directions in the MuZero approach, leave areas for further work.

Points for Improvement: There are also some minor points for improvement:

- The instruction parts have lots of content, and it will be more readable if there have some subsections.
- Some explanation of figures in review needs more details.

Organisation: In this section you are considering the quality of the overall organisation of the IRR. Again, look at the rubric for the organisation criterion and choose a grade that best matches what you have read.

Grade: Excellent

Justification: The following points justify the grade of good for this section:

- The abstract and introduction parts present a good overview of the content and structure of the IRR, which will help readers start this review easier.
- Section 2.1-2.3 respectively introduce the application of reinforcement learning in three situations.
- The general layout of this review is firstly a brief introduction to the key points covered below in the introduction section. Then, the application and development of different reinforcement learning methods in different games are illustrated in the content section. Finally, in the conclusion part, the conclusions above are summarized and the direction of further research is proposed.

Points for Improvement: Some minor points could lead to improvements:

- There are many small points in the introduction part, which can be subdivided like the content part, which will make the introduction part more structured and more readable.
- It is best to write the summary and conclusion sections separately at the end.

3 Rubric

This is a copy of the first three criteria of the rubric that will be used to assess your final IRR submissions. The full rubric has additional criteria that we are not asking you to consider in this exercise. The main point of this exercise is to ensure that you have a clear idea of the structure of an IRR and the criteria that will be used to assess your IRR.

Criterion	Unacceptable	Fair	Good	Excellent
Topic selection	Topic is very general and has no focus. Scope of the paper is so broad it is impossible to give proper treatment within the given length.	Student has narrowed the topic somewhat, but further work is necessary to clarify the question to be considered in the review.	Topic is specific enough that the student can give proper treatment within the given length. The question could still be further refined.	Topic of the paper is clearly defined. Research focus has been narrowed by specific criteria. Clear consideration of the question may be clearly given within the paper's length.
Content	Research articles reviewed are scattered and unrelated. There is no evidence of a systematic approach to the selection of papers to include.	Articles included in the review had some relation to each other and to the chosen topic but this relation is loose and somewhat unfocused.	Papers reviewed are cohesive and inter-related and are strongly related to the chosen topic. There is evidence of good coverage of the topic.	The articles reviewed are clearly inter-related and build upon each other to provide good coverage of the questions identified in the review.
Organisation	Writing is unclear. The purpose of the individual paragraphs is not obvious to the reader and the higher-level structure is not clear.	The purpose of individual paragraphs is mostly clear. Occasionally paragraphs contain more than one main idea or contain sentences unrelated to the main idea. Some support and flow among paragraphs. Reader has a fairly clear idea of what the writer intends.	Writing is organized to answer the research questions identified in the topic. Evidence is clearly presented, and conclusions are often soundly justified. The reader can follow the structure of the paper and understands the writer's intentions.	Writing is organized to answer the research questions identified in the topic. Evidence is clearly presented, and sound justifications are used to support conclusions that address the questions identified in the topic. The reader can easily follow the arguments.

ORIGINALITY REPORT

0%

SIMILARITY INDEX

0%

INTERNET SOURCES

0%

PUBLICATIONS

0%

STUDENT PAPERS

PRIMARY SOURCES

Exclude quotes On

Exclude bibliography On

Exclude matches < 10 words

FINAL GRADE

GENERAL COMMENTS

Instructor

60/100

PAGE 1

PAGE 2



Comment 1

providing.a more specific and in-depth commentary here would be beneficial



Comment 2

what are the comparisons based on?

PAGE 3

PAGE 4

TOPIC CHOICE (26%)

50 / 80

This is the criterion considering the evaluation of the topic choice of the chosen sample IRR

UNACCEPTABLE (20)	The chosen grade deviates significantly from your assessment. The justification is either irrelevant or absent.
FAIR (50)	Either the chosen grade is at most one out or a coherent justification is given for the grade (even though the grade is wrong).
GOOD (65)	The grade is at most one out from your grade and the justification is coherent.
EXCELLENT (80)	The justification is strong and the grade matches the justification.

CONTENT (27%)

50 / 80

This is the criterion considering the evaluation of the content of the chosen sample IRR

UNACCEPTABLE (20)	The chosen grade deviates significantly from your assessment. The justification is either irrelevant or absent.
FAIR (50)	Either the chosen grade is at most one out or a coherent justification is given for the grade (even though the grade is wrong).
GOOD (65)	The grade is at most one out from your grade and the justification is coherent.
EXCELLENT (80)	The justification is strong and the grade matches the justification.

ORGANISATION (27%)

65 / 80

This is the criterion considering the evaluation of the organisation of the chosen sample IRR

UNACCEPTABLE (20)	The chosen grade deviates significantly from your assessment. The justification is either irrelevant or absent.
FAIR (50)	Either the chosen grade is at most one out or a coherent justification is given for the grade (even though the grade is wrong).
GOOD (65)	The grade is at most one out from your grade and the justification is coherent.
EXCELLENT (80)	The justification is strong and the grade matches the justification.

EXCEPTIONAL (20%)

20 / 80

This is the criterion recognising exceptional performance. It should be graded unacceptable unless the evaluation of the sample IRR demonstrates exceptional performance

UNACCEPTABLE (20)	Give this grade if the evaluation of the sample IRR is NOT out of the ordinary. There are no exceptional criteria in evidence
FAIR (50)	Give this grade if there is some evidence of using wider resources than those of the course
GOOD (65)	Give this grade if the evaluation shows evidence of synthesis of different courses to create the evaluation of the IRR
EXCELLENT (80)	Give this grade if the evaluation of the IRR is strikingly novel and surprises you and has high relevance to the evaluation task.