

ASSESSMENT 1 BRIEF	
Subject Code and Title	ISY503 Intelligent Systems
Assessment	Case Study Report
Individual/Group	Individual
Length	1500 words (+/- 10%)
Learning Outcomes	<p>The Subject Learning Outcomes demonstrated by successful completion of the task below include:</p> <ul style="list-style-type: none"> a) Determine suitable approaches towards the construction of AI systems. b) Determine ethical challenges which are distinctive to AI and issues that may arise with such rapidly developing technologies. d) Communicate clearly and effectively using the technical language of the field and constructively engage with different stakeholders.
Submission	Due by 11:55pm AEST Sunday end of Module 5 (Week 5).
Weighting	25%
Total Marks	100 marks

Task Summary

You are to write a report based on a case study that focusses on the application of an intelligent system. Intelligent systems can encompass many AI centred systems but the main focus of this assessment is Computer Vision and Natural Language Processing (NLP).

Computer vision, as a field, is progressing at a rapid rate helped in part by advances in deep learning. There are many challenges in computer vision including; dual priorities, speed for real-time detection, limited data, class imbalance, and ethics. There are many Computer Vision problems including object detection, gesture recognition, hand sign detection, satellite image classification, to name just a few.

NLP has given us the ability to talk to a machine (voice as input), such as the AI-based systems like Alexa or Siri, and be understood. Alas there is still a long way to go before we have systems that exhibit a real understanding of natural language (Natural Language Understanding/NLU), as ultimately computers need to be able to determine polarization and sentiment analysis, emotion analysis, topic detection and classification.

For this assessment you will be provided with a choice between a computer vision case study, and a natural language processing case study. Select one case study only. **Your facilitator will give you the case studies during Module 1 (Week 1).**

The report should be 1500 words (+/- 10%) and is an individual piece of work.

Context

Exploring various applications of intelligent systems will give you a greater understanding of the use and efficacy of these systems, to solve simple through to complex problems. Learning to analyse the suitability of different AI methods, the ethical issues associated with them, and the technical language used in the industry is essential to ensure you are able to articulate the challenges around implementation of the intelligent system being discussed. Using case studies that focus on intelligent systems will bolster your analytical skills, helping you to think through the how, why, when and where of implementing such a system. By completing this assessment you will to appreciate the real-life application of intelligent systems, and begin to identify opportunities to utilise these systems across a breadth of problems.

Task Instructions

Read the selected case study and integrate your report writing with what you have learned from Weeks 1–5, write a case study report with the following sections:

- **Introduction:** This section should introduce the case study you have been given, and highlight the significance of the problem it seeks to address.
- **Background:** This section should provide sufficient background information on, and explain the application of, the intelligent system including machine learning models and methods.
- **Method:** Elaborate here on the method(s) used and explain how the research was undertaken. You should include the source of data used in the case study, and identify any ethical issues that may have arisen upon its use (e.g., medical history of patients).
- **Results:** What was the outcome of the case study?

- **Discussion:** In this section you should explain the relevant and significance of your chosen study, and you should identify obstacles restricting the intelligent system. You should also mention any constraints reported in the article.
- **Recommendations:** This section should include critical perspectives and recommendations to improve or enhance the system.
- **References:** You should support your report with additional peer-reviewed journal articles. These should be in appropriate APA style.

Please refer to the Assessment Rubric for the assessment criteria.

Referencing

It is essential that you use current APA style for citing and referencing the sources that you use. Please see more information on citing and referencing guidelines on the [Academic Success webpage](#).

Assessment Support

For a range of additional resources and support to help you complete your assessment, please consult the [Study Support](#) page on the Student Hub.

Academic Integrity

All students are responsible for ensuring that their submitted work is original, adheres to academic writing standards outlined in the [Torrens University Academic Writing Guide](#), and is appropriately referenced according to the guidelines provided in the [Torrens University APA Referencing Guide](#). Students need to have read and be aware of the Torrens University Australia [Academic Integrity Policy](#), [Academic Integrity Procedure](#) and subsequent penalties for academic misconduct. For more information, please refer to the [Academic Integrity](#) guidelines and the [Torrens University Library](#).

Students must also keep all required evidence in making an assessment; a copy of all submitted material and any assessment drafts.

Generative AI

Please refer to the [Torrens University Library](#) for guidance on the use of Generative AI. Please speak to your learning facilitator regarding the use of GenAI tools in your assessments.

Submission Instructions

Submit this task via Assessments > Briefs & Submissions in the main navigation menu in ISY503: Intelligent Systems. Please name your file using the following format:

- SubjectCode_Surname_FirstNameInitial_AssessmentNumber
 - e.g. ISY503_Jones_S_Assessment_1

Your marked assessment can be viewed in MyLearn.

Assessment Due Dates and Late Penalties

Assessments may be submitted on or before the due date. Late penalties apply for assessments that are submitted after the due date.

Refer to:

- Assessment Policy for Higher Education Coursework (HE) and ELICOS
[Torrens University | Think Education](#)

- Assessment Special Consideration Guidelines for Students (HE Coursework)
- [Torrens University | Think Education](#)
- [Student Hub](#) for Assessment Extension Information.

Special Consideration

To apply for special consideration for a modification to an assessment task or exam due to unexpected or extenuating circumstances, please consult the [Assessment Policy for Higher Education Coursework and ELICOS](#) and, if applicable to your circumstance, submit a completed [Application for Assessment Special Consideration Form](#) to your learning facilitator.

Assessment Rubric

Assessment Attributes	Fail (Yet to achieve minimum standard) 0-49%	Pass (Functional) 50-64%	Credit (Proficient) 65-74%	Distinction (Advanced) 75-84%	High Distinction (Exceptional) 85-100%
<p><i>Evaluation of information selected to support the case study</i></p> <p>Percentage for this criterion = 40%</p>	<p>Limited understanding of key concepts required to support the case study.</p> <p>Confuses logic and emotion. Information taken from reliable sources but without a coherent analysis or synthesis.</p> <p>Viewpoints of experts are taken as fact with little questioning.</p> <p>The implementation of the system has not been understood.</p>	<p>Resembles a recall or summary of key ideas.</p> <p>Often conflates/confuses assertion of personal opinion with information substantiated by evidence from the research/course materials.</p> <p>Analysis and evaluation do not reflect expert judgement, intellectual independence, rigor and adaptability.</p> <p>Implementation of the system has been understood but not in details for re-implementation.</p>	<p>Supports personal opinion and information substantiated by evidence from the research/course materials.</p> <p>Demonstrates a capacity to explain and apply relevant concepts.</p> <p>Identifies logical flaws.</p> <p>Questions viewpoints of experts.</p> <p>Implementation of the system has been understood but not in details for re-implementation.</p>	<p>Discriminates between assertion of personal opinion and information substantiated by robust evidence from the research/course materials and extended reading.</p> <p>Well demonstrated capacity to explain and apply relevant concepts.</p> <p>Viewpoint of experts are subject to questioning.</p> <p>Analysis and evaluation reflect growing judgement, intellectual independence, rigor and adaptability.</p> <p>Implementation of the system has been understood but re-implementing the system needs more details in no more than two parts.</p>	<p>Systematically and critically discriminates between assertion of personal opinion and information substantiated by robust evidence from the research/course materials and extended reading.</p> <p>Information is taken from sources with a high level of interpretation/evaluation to develop a comprehensive critical analysis or synthesis.</p> <p>Identifies gaps in knowledge.</p> <p>Exhibits intellectual independence, rigor, good judgement and adaptability.</p> <p>Fully understands how to re-implement the system again and also in an optimised way.</p>

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<p><i>Ethical Considerations</i> <i>Ethical issues have been identified and considered in the context of AI and its rapid development</i></p> <p>Percentage for this criterion = 20%</p>	Data source and ethical matters associated with it is not addressed.	Data source and ethical matter associated with it is identified but not discussed.	Data sources used in implementation and ethical matters associated with it have been identified and discussed at a shallow level.	Data sources used in the case study implementation and ethical matters associated with it have been comprehensively identified and discussed.	Data sources used in the case study implementation and ethical matters associated with it have been comprehensively identified and discussed. Alternative suggestions have been made in light of the issues identified.
<p><i>Effective Communication (Written)</i></p> <p>Percentage for this criterion = 25%</p>	<p>Presents information.</p> <p>Specialised language and terminology is rarely or inaccurately employed.</p> <p>Meaning is repeatedly obscured by errors in the communication of ideas, including errors in structure, sequence, spelling, grammar, punctuation and/or the</p>	<p>Communicates in a readable manner that largely adheres to the given format.</p> <p>Generally employs specialised language and terminology with accuracy.</p> <p>Meaning is sometimes difficult to follow. Information, arguments and evidence are structured and sequenced in a way that is not always clear and logical.</p>	<p>Communicates in a coherent and readable manner that adheres to the given format.</p> <p>Accurately employs specialised language and terminology.</p> <p>Meaning is easy to follow. Information, arguments and evidence are structured and sequenced in a way that is clear and logical.</p>	<p>Communicates coherently and concisely in a manner that adheres to the given format.</p> <p>Accurately employs a wide range of specialised language and terminology.</p> <p>Engages audience interest. Information, arguments and evidence are structured and sequenced in a way that is, clear and persuasive.</p>	<p>Communicates eloquently. Expresses meaning coherently, concisely and creatively within the given format.</p> <p>Discerningly selects and precisely employs a wide range of specialised language and terminology.</p> <p>Engages and sustains audience's interest. Information, arguments and evidence are insightful, persuasive and expertly presented.</p>

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	acknowledgment of sources.	Some errors are evident in spelling, grammar and/or punctuation.	Occasional minor errors present in spelling, grammar and/or punctuation.	Spelling, grammar and punctuation are free from errors.	Spelling, grammar and punctuation are free from errors.
<i>Correct citation of key resources and evidence</i> Percentage for this criterion = 15%	Demonstrates inconsistent use of good quality, credible and relevant resources to support and develop ideas. Little or no attempt to include in-text citations, a minimum number of resources (6) and/or a reference list at the end of the report. APA referencing is omitted or incorrectly addressed.	Demonstrates use of credible and relevant resources to support and develop ideas, but these are not always explicit or well developed. Some attempt to include in-text citations, a minimum number of resources (6) and a reference list at the end of the report. APA referencing is basic, with frequent or repeated errors.	Demonstrates use of credible resources to support and develop ideas. Adequate use of in-text citations and 10 to 12 resources have been included and listed in the reference list. APA referencing is adequate, with occasional errors.	Demonstrates use of good quality, credible and relevant resources to support and develop arguments and statements. Show evidence of wide scope within the organisation for sourcing evidence.	Demonstrates use of high-quality, credible and relevant resources to support and develop arguments and position statements. Show evidence of wide scope within and without the organisation for sourcing evidence. Excellent and meticulous use of in-text citations and 18 or more than 18 resources have been included and listed in the reference list. Applies APA referencing techniques with no errors.

The following Subject Learning Outcomes are addressed in this assessment

SLO a)	Determine suitable approaches towards the construction of AI
SLO b)	Determine ethical challenges which are distinctive to AI and issues that may arise with such rapidly developing technologies.
SLO d)	Communicate clearly and effectively using the technical language of the field and constructively engage with different stakeholders.