

INFS 4020 – Big Data Concepts

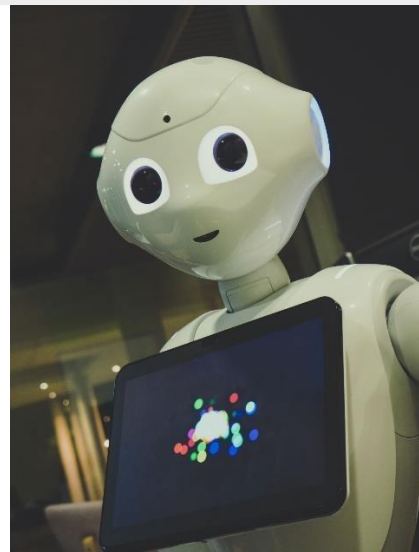
Assignment 1: Technology Review (SP5 2022)

DUE: By 11PM Adelaide Time, Sep 9th 2022

General instructions:

- This assignment is worth 30% of your final grade. It is due **no later than 11 pm on Sep 9th**.
- You will need to submit your assignment via learnonline. The file you submit needs to be in a **pdf** format and prepared **using the template provided**.
- The word limit for this assignment is 1500 words +/- 10%. Marks will be deducted if the assignment is too short (min 1350 words) or too long (max 1650 words).
- **Any late submission will attract a penalty of 10% per day, or part thereof, the assignment is late. The cut-off time is 11pm each day. No submissions are allowed after 3 days.**

Assessment task overview:



Photos by Owen Beard and Frank Chamaki on Unsplash

Imagine you are a Big Data consultant who has been asked to prepare a report for a group of organisations from a particular industry. You need to propose and discuss an Artificial Intelligence data technology solution that would match specific business needs from that industry. Assume that the audience know little about Big Data or the AI technology or technique you are proposing.

Your report is to help them to make an investment decision but it is not just a sales pitch. You must demonstrate that you know the industry and the proposed technology, can back up your claims with evidence and are able to effectively communicate new concepts and technical terms to a business audience.

Assessment task details:

From McKinsey and Company's *Notes from the AI frontier: Applications and value of deep learning* (<https://www.mckinsey.com/featured-insights/artificial-intelligence/notes-from-the-ai-frontierapplications-and-value-of-deep-learning>):

- Choose one of the industries listed in the article (see below);
- Choose one of the AI techniques listed in the article (see below);
- Then write a critical review for how your chosen AI technique could be used in your chosen industry.

Choose an industry:

Start with **Exhibit 2** in the McKinsey article *Notes from the AI frontier: Applications and value of deep learning*.

Choose one of the industries from the following list only

- Aerospace and defense
- Retail
- Media and entertainment
- Travel

Do some background research on the industry using resources from this library page:

<https://guides.library.unisa.edu.au/companyinfo>

The screenshot displays the University of South Australia library website. The top navigation bar includes links for LIBRARY HOME PAGE, CATALOGUE, DATABASES, GUIDES, and HELP. Below this, a breadcrumb trail shows 'Library > Guides > Company and Industry Information > Home'. The main content area features a 'Company and Industry Information' guide with a search bar and a 'Search' button. A navigation menu includes 'Home', 'Company and Industry', 'Company Financials', 'Country Information', 'Business Statistics and Rankings', and 'Regulatory Information'. The 'Company and Industry' section is highlighted. Below the navigation menu, there are two main sections: 'Company and Industry Information- quick guide' and 'COVID-19 Information'. The 'quick guide' section includes a table for finding company information, and the 'COVID-19 Information' section includes a video player for 'Company and Industry Information: COVID-19'.

Are you looking for?	Is the company...?	Try these databases:
Australian	Public	<ul style="list-style-type: none">• Company 360• IbisWorld• DatAnalysis Premium (Morningstar)
	Private	<ul style="list-style-type: none">• Company360

You want to gain an understanding of your selected industry – **Ibis World** is an excellent starting point. Simply search for the industry you are interested in – for instance if you were looking for biotechnology, here is what Ibis World has on offer:

Choose a technique:

Once you have an understanding of the industry, you need to choose **one** of the five AI techniques from **Exhibit 2**: *feed-forward networks, recurrent neural networks, convolutional neural networks, generative adversarial networks or reinforcement learning*.

First, read the rest of that article to find out more about the techniques in general, noting examples of how that technique is being used or being considered for use.

You can choose any of the techniques – there are no right or best choices, since they all can be used by organisations. You need to understand the technique sufficiently to be able to explain how it will be a solution, so do some research on this technique and its use by organisations.

Note: Do not choose one specific organisation, and do not focus on a specific tool or vendor – but you might look at demos and whitepapers to understand the technique further.

Referencing:

Key resource is this website: www.unisa.edu.au/referencing. You should use the Harvard UniSA or APA referencing style.

Referencing is important for assignments to: (a) expand your knowledge of the assignment topic and (b) provide evidence to the claims you make and (c) demonstrate you know what you are talking about to make a convincing proposal and (d) provide other examples or case studies

The general rule is if you are using information or data that is not of your own creation then you need to acknowledge it. This includes the screenshots and any data you use. Not only is this for academic integrity but to add weight to your recommendations – to show they are just not opinions.

The more you can back up your suggestions with research, examples, etc the higher mark you will receive.

How many references?

That depends on how many points you are making. Generally, more is better because you have used more sources to understand the topic and reinforce your points.

A minimum of 5 references is required. However, just adding as many references as possible without using them in the assignment will not earn maximum marks.

Do not plagiarise, i.e. do not copy directly from references without using quotation marks or without including a reference, and make sure that you follow the rules when paraphrasing.

Keep direct quotes to a minimum.

We want your understanding on the topic, not copied words from experts – this only demonstrates that you can research well, not apply your learning.

Reference quality:

The type (quality) of references makes a difference and this is considered in the marks as well. Feel free to use the course readings.

Avoid marketing/vendor sites and general websites - the quality is not assured because anyone can get a website up regardless of their expertise and marketing material from software companies is usually biased. The exception would be news sites when you want to report an event or where they are the sole vendor of a technology.

Since this is a fast-moving area, look for references from the last 5 years.

Presentation and structure:

The structure should be in a logical format that flows well. As a minimum include a title page and section headings. The title page is separate to the assignment cover page.

A sample template for the assignment is on the course website. Please use this structure – you can add to it with sub-headings if you wish.

Note: Do not include an Executive Summary for this assignment (note this is different to an Introduction).

Since this is proposal for a business audience, it should be presented in a professional format making it easy to read. **The use of diagrams and graphs, particularly to show figures will earn more marks.** An efficient layout is also important but do not spend too much time on making it look good and not enough time on the content.

Using bullet points are OK occasionally but you will need sentences for each point (i.e. just a bullet point list with no explanation is not suitable).

Word limit:

1500 words +/- 10%.

Minimum 1350 words

Maximum: 1650 words

Marks will be deducted if the assignment is too short or too long. Keeping to a word limit requires a focus on what the audience most needs to know.

These are excluded from the word count:

- Title page
- Table of contents
- References
- Footnotes
- Text within diagrams

Other:

- Do not write in the first person ("I")
- Use formal language – this is a report intended for business.

Marking criteria:

The assignment will be marked on how well you cover each of the points:

Area	Weighting
Demonstrated knowledge of your chosen AI technology/technique and your chosen industry	30%
Specific examples or suggestions of using the AI technology/ technique for your chosen industry	30%
Limitations or issues with using this AI technology/technique	10%
Referencing <ul style="list-style-type: none">• Correct referencing as per UniSA guidelines• Quality of references• How recent references are	10%
Use of formal business or academic language, including correct grammar and spelling	10%
Layout and professional presentation	10%