

COMP90049 Introduction to Machine Learning Report

What are your academic writing pain points?

Task requires you to 'critically assess'?

What does it mean to be 'critical'?

academic-skills@unimelb.edu.au

Academic Skills



THE UNIVERSITY OF
MELBOURNE

TIP: Use a process to produce work

1. Determine the task type

What *type* of writing is it?

Essay

Report

What is the structure?

Lit Review

What am I expected to do?

2. Carefully analyse the task

Highlight key information

TIP: Make sure this highlighted language appears in your response

The task

The goal: critically assess the effectiveness of various Machine Learning classification algorithms on the problem of determining a tweeter's location, and to express the knowledge that you have gained in a technical report.

Anonymised report of 2000 words in length (+/-10%), including in-text references

Introduction: context and position

Literature review: a short summary of some *related* (relevant) literature, including the data set reference and at least two additional relevant research papers of your choice

Method: Identify the newly engineered feature(s), and the rationale behind including them

Results: in terms of evaluation metric(s) and examples

Discussion / Critical Analysis: 2 areas – *Contextualise* the system's behavior, i.e. reasons for the relative performance of different methods & *Discuss* any ethical issues

Conclusion: demonstrate identified knowledge

Bibliography: incl. Eisenstein et al. (2010) + other related work (min 2) – APA recommended

Task type

2: Topic /
function

What do
others say?

How did I do
this?

What did I
find?

What does it
mean?

What do I
now know?

Evidence



3. Plan / organise ideas

Based on analysis generate a 'sectioned plan'

On your computer

Allocate word counts

TIP: method, results, discussion substantive

4. Research

Find info and read it

As you read, put bullet points in your plan

- Definition of blah (Williams p44)
-
-

- Good idea (Long p15)
-
-

- Great thought (Ng p1)
-
-

- Possible idea (Ng p3)
-
-

TIP: Research using
<https://unimelb.libguides.com/>

5. Draft – start writing

Start anywhere in the body

Start where you feel confident

TIP: write Intro / Conclusion last (5% of words)

Intro

- Definition of Blah (Williams p44)

-
-

- Good idea (Long p15)

-
-

- Great thought (Ng p1)

-
-

- Possible idea (Ng p3)

-
-

Conclusion

6. Finalise *then* submit

Do final check on hard copy

Read out loud

Know by when & how to submit

Task requires you to 'critically assess'?

What does it mean to be 'critical' in an academic context?

Two key elements to critical literacy

1. A reporting / describing element:

The 'catalogue'

You find information about the topic and **report, describe** what it says, what they did, found, claim etc.

This frames the second part: important but don't stop here

2. An interpretive / response element:

The 'dialogue'

You interpret and respond to what you have read – ***critically engage with*** the readings and the topic



What are some reflective questions?

What happened? What do I/we know? (describing, assessing, context)

What has changed? (gap btw expectation and actual)

What worked? **Why?** (strengths)

What didn't? **Why?** (limitations)

What have I learned? (understandings)

What might we do differently? (learning)

How can we get there? (development)

What do I know now? (conclusions)

Key points

Think about how information is ordered within a paragraph

How does each sentence link to the one before it *and* after it

– ***how*** are you showing this?

Is the sequence logical?

Same for paragraphs – how does the paragraph relate to the next one?



Cohesion - linking

2 types of language in writing:

Content – from reading and learning, e.g. *tweet, machine, baseline,*

Functional – cohesive-linking-highlighting

Therefore, however, first, next, for example, though, and, which

This is important because ... This shows that... This tells us ...

<https://m.eliteediting.com.au/50-linking-words-to-use-in-academic-writing/>

<http://www.phrasebank.manchester.ac.uk/>

Interpretive language

This shows* that ... (*suggests / implies / gives the impression that ...)

This is important / significant because...

This is worth noting as / because it ...

This calls attention to ...

This can be illustrated by ...

What this means* is ... (*shows / tells us / reveals / highlights / points to / implies)

... tells us that ...

... importantly* suggests that ... (*crucially, significantly)

... which points to / suggests the need for ...

... which is vital / crucial as it ...

... which shows / illustrates that ...

... which is significant as it ...

... is illustrative because it ...

... meaning that ...

... illustrating / pointing to the need for ...

In doing so, it points to ... / In so doing, tells us that ...

Use this language!
It moves your
thinking from the
descriptive to the
interpretive

Report writing Tips

Be **on task** – show you are doing so with **key language**

*This paper **explores** / **examines** / **identifies**... (intent / position) - **TIP**
frame this in present simple*

*This **suggested that**... (discussion / analysis)*

*Having carried out ... we **conclude** / **find** that ... (concluding)*

Use numbered **headings**

Be aware of the **functionality** of the report sections: make relationships clear to current work

Be **interpretive** and **analytical**, not just descriptive, of both text *and* data

Clear graphics – simple is best; refer to the graphics

Report writing Tips

Edit *before* submitting – looking for

Formal language: full forms (~~didn't~~ vs *did not*); avoid emotive language 'frustrating', 'disappointing', 'obvious', 'good', 'bad'

Be aware of **tense : time** ... *a second experiment ~~is~~ was performed.*

Tense use TIPS:

Past tense for finished action; *did, found, discovered, proved, showed*

Present simple for fact, current observation or current feeling; '*... it refers to ... it signals that ... we can see that ... it shows...*

*Lee (2010) **proposes** that this is ...*

Cohesion – consider link & transition between ideas

Short, join:

A majority class baseline was used for this experiment. It is based on the ‘Zero Rule’. This rule classifies all tweets according to labels with the greatest training set ratio.

*A majority class baseline was used for this experiment **which** is based on the ‘Zero Rule’ **classifying** all tweets according to labels with the greatest training set ratio. (28w) OR*

The majority class baseline used for this experiment was based on the ‘Zero Rule’ classifying all tweets according to labels with the greatest training set ratio. (26W)

Long; cut:

By analysing the training set, it was somewhat surprising to find a number of feature values equal to 0, especially as many samples have 0-value for all their attributes, which means that none of the feature terms ever occurs in them. (41w)

Analysing the training set, we found a somewhat surprising number of feature values equal to 0, especially as many samples have 0-value for all their attributes. This means that none of the feature terms ever occurs in them.

The impact of sentence length

If the sentences are ***short and related***, then join them

Less than 8 words in the sentence (1 line in a Word doc)	Very short sentence	OK, but don't use too many of these; writing can appear short and choppy, hard to read.
8-15 words (1 - 1.5 lines)	Short	✓ OK combined with 15-25.
15-25 words (2 - 3 lines)	Average number per sentence.	✓✓ This length will form the majority of your sentences.
25-35 words (3 - 4 lines)	OK, but becoming long.	✓ Can be effective if the point is worth making in a single sentence; make sure you have control over the idea(s) though and use appropriate connecting / linking words.
35-45 words (4 - 5 lines)	Long	Consider breaking up the idea(s) into two or more shorter sentences.
More than 45 words (+ 5 lines in a Word doc)	Too long	✗ Avoid this; the point gets lost, control over the language is lessened and chances for errors in form and logic increase.

If the sentence is +40 words (not a list), consider breaking it up

Make time to edit

Editing attitude: task focus - Do I/we *need* it? Is it relevant? No? get rid of it

Big edits: Possible removal of whole sections, paragraphs or sentences

Small edits: word, sentence, text level

Correctness, flow-link of ideas, expression

Trim or compression editing:

... which enabled us to make clear recommendations (7 words) vs

... which enabled clear recommendations ... (4 words) OR

... enabling clear recommendations (3 words)

Reflexive repetition: removal of unnecessary repetition

This **was evidence of** the program's **three features. These features** address ... vs

This **evidenced** the program's three features **which** address ...

TIPS:

Edit when fresh – get distance from paper
Final edit on hard copy
Read aloud – you or MS Word Read Aloud function

“Direct quotations” – Author’s *exact* words – *do not overuse*

Cheng et al. (2010) proposed a user location framework, “based purely on the content of the user's tweets, even in the absence of any other geospatial cues” (p. 759).

Paraphrasing (Indirect quoting) or summarising
– present the idea *in your words* – still need to cite

A framework was proposed whereby location of the user was estimated solely on tweet content even where geospatial data is absent (Cheng et al., 2010).



TIP:
More
of this

NOTES:

Author vs idea focus in citations

Citation is a writing skill; making a Reference list is a technical skill

APA tips

Always need the year with the author(s) in text, not the initials (that's for the Ref List)

Avoid starting or finishing a paragraph with a citation – *try* to **start and finish on *your words***

Et al. (three or more authors, shortened from the first citation)

- always takes a full stop in *or* out of the brackets
- always a plural; it means 'and others', e.g. Letts et al. (2015) argue that ... (not '~~argues~~')
- Don't possess et al.

~~Cheng et al.'s~~ (2010) paper proposed ... VS ... the paper by Cheng et al. (2010) proposed ...

Always comment on direct quotes, e.g.

... part of the data set" (Lee, 2017, p. 5). **The implications of this are ...**

Stage II task

Write 200-400 words total per review, responding to three 'questions':

- Briefly summarise what the author has done in one paragraph (50-100 words)
- Indicate what you think that the author has done well, and why in one paragraph (100-200 words)

The strengths of the writing to me are ... What is clear about the paper is ...

You have ... and this is evident in the way you ... because ...

- Indicate what you think could have been improved, and why in one paragraph (50-100 words)

The writing could improve in the following areas ... You could ... It needs more ...

You could try to ... Think about having more of ... / less of...

What could we look for?

Message clarity / language / content / citation & Ref List / link / flow / accuracy / headings / relevance / critique / interpretation / use of data / figures / charts



	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN
JANUARY					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	<div>Semester planners: Any library or Stop 1 or https://students.unimelb.edu.au/academic-skills/explore-our-resources/time-management/semester-planner</div>																																		
FEBRUARY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28							
MARCH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
APRIL					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
MAY					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
JUNE	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				

Plan

Start!

Read

Write

Submit!

Finalise*

Semester planners: Any library or Stop 1 or <https://students.unimelb.edu.au/academic-skills/explore-our-resources/time-management/semester-planner>

Plan

Start!

Submit!

Finalise*

Read

Write

Writing resources

Developing a research question

<https://www.youtube.com/watch?v=mrWeLJZydUU&t=1s>

Cohesive, Critical and Interpretive Writing

<https://www.youtube.com/watch?v=AMeyQPYPYHbGg&list=PLJSPTc0K-PIaEBbDi5e15O6a4AMQlqwg&index=19>

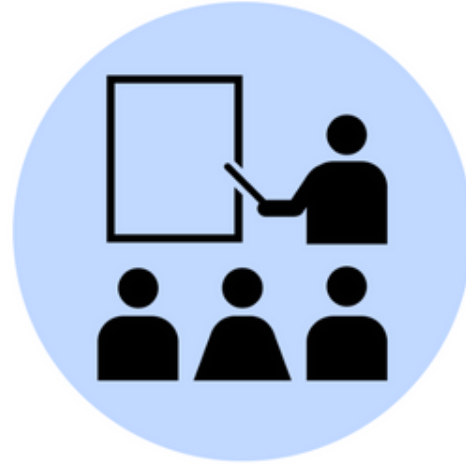
APA 7

<https://students.unimelb.edu.au/academic-skills/explore-our-resources/referencing/using-apa-7th-style>

Academic Skills Support



Online
resources



Workshops &
courses



Individual
appointments

<http://services.unimelb.edu.au/academicskills>



<https://www.youtube.com/user/UoMAcademicSkills>