

COGS 303: Critique of Research Papers

1. Goal

Write a critique of two *research papers* on your favourite topic in Cognitive Systems—**one very influential (Paper 1 > 100 citations); the other not (Paper 2 < 10 citations)**.

The topics of the papers should be similar enough that the author of one could be a reviewer for the other, but *no common authors*. These should be **source papers on empirical work**. **Do not use review papers or theoretical (or philosophy) papers**.

Each paper should be **published in an academic journal** and be **at least 5 years old**.

Please make sure all the following are addressed:

1. Quality of the writing

For each of the two papers (2 x 8 marks; one paragraph per paper)

- i. was the writing sometimes not *clear*? Where?
- ii. was the writing sometimes not *concise*? Where?
- iii. were there problems with the *organization* of the paper? Explain.
- iv. did the paper tell a good *story*? Explain why it was/wasn't.

Then, for one of these papers (4 marks; two sections + one paragraph)

Find a section of text 150-300 words in length. Rewrite it using $\leq 3/4$ of the *number of words* in the original. Explain why the new version is better.

2. Quality of the arguments

For each of the two papers (2 x 8 marks; one paragraph per paper)

- i. were any terms *ambiguous, or poorly defined*? Which ones?
- ii. were any important *unstated assumptions*? Which ones?
- iii. were there any *errors of logic* in the reasoning? Where?
- iv. were there any *confusions* between causation and correlation? Where?

Then, for one of these papers (4 marks; one paragraph)

Give two concrete examples of an *improved argument*. Explain why its' better.

3. Consideration of alternatives

For each of the two papers (2 x 8 marks; one paragraph per paper)

- i. were all possible *general approaches* to the problem discussed? Explain.
- ii. was the final choice of approach a *reasonable* one? Why (not)?
- iii. were all possible *explanations* of the results discussed? Explain.
- iv. was the final choice of explanation a *reasonable* one? Why (not)?

Then, for one of these papers (4 marks; one paragraph)

What are two *alternate explanations* of the results? Explain.

4. Quality of the research design

For each of the two papers (2 x 8 marks; one paragraph per paper)

- i. did the study adequately *operationalize* all key terms? Explain.
- ii. did the study miss *any important factors* in what it tested? Explain.
- iii. what were two important *noise factors*? Why are they important?
- iv. what were two potential *confounding factors*? Explain.

Then, for one of these papers (4 marks; one paragraph)

What are two concrete ways to improve the *research design*? Explain.

5. Quality of the results (first four MAGIC criteria)

For each of the two papers (2 x 8 marks; one paragraph per paper)

- i. did the results have considerable *magnitude*? Explain.
- ii. were the results well *articulated*? Explain.
- iii. how *general* were the results? Explain.
- iv. were the results *interesting*? (e.g., new, important) To whom? Why?

Then, for one of these papers (4 marks; one paragraph)

What are two ways the *research question* could have been improved? Explain.

6. General Conclusions (30 marks)

[3 x 5 marks] Describe the greatest differences in quality between the papers in *three* of the criteria 1-5 above.

[15 marks] Explain the contribution of each of the three criteria—if any—to the influence of the two papers.

20 marks for the style of the *critique itself* (clarity, format)

Total: 150 marks

2. Oral Presentations

Each person will have a chance to present their critique at the end of the term. (Detailed schedule will be announced). Students do not need to present. But if they do not they will not be eligible for the *bonus points* awarded.

Please prepare a pdf file of the presentation containing the main points. *Email this to the TA before 11:00pm the day before the presentations.*

3. Critique Format

A. Title Page (1-2 pages)

- i. Title of the Critique (1-15 words)
- ii. Student name and ID
- iii. Abstract (≤ 75 words each paper) x 2 papers
 - title, author(s)
 - number of citations for the paper
 - its research question

B. Body (≤ 5200 words). Includes the following sub-headings:

- i. **Quality of the writing** (compare papers)
 - discuss each paper in turn (≤ 250 words/paper; one paragraph each)
 - address each of the four points in turn
 - improve a section of text in one paper (≤ 700 words; three paragraphs)
 - original section (150-300 words)
 - replacement section ($\leq 3/4$ the number of words in original)
 - explanation of why the new version is better (≤ 250 words)

- ii. **Quality of the arguments** (compare papers)
 - discuss each paper in turn (≤ 250 words/paper; one paragraph each)
 - address each of the four points in turn
 - two improvements to one paper (≤ 250 words; one paragraph)
 - iii. **Consideration of alternatives** (compare papers)
 - discuss each paper in turn (≤ 250 words/paper; one paragraph each)
 - address each of the four points in turn
 - two improvements to one paper (≤ 250 words; one paragraph)
 - iv. **Quality of the research design** (compare papers)
 - discuss each paper in turn (≤ 250 words/paper; one paragraph each)
 - address each of the four points in turn
 - two improvements to one paper (≤ 250 words; one paragraph)
 - v. **Quality of the results** (compare papers)
 - discuss each paper in turn (≤ 250 words/paper; one paragraph each)
 - address each of the four points in turn
 - two improvements to one paper (≤ 250 words; one paragraph)
- C. **General Conclusions** (≤ 500 words; two paragraphs of ≤ 250 words each)
- the biggest differences in 3 of the 5 criteria above.
 - the greater the difference, the higher the mark for that criterion.
 - explanation of why the paper was/wasn't highly cited *in terms of these 3*,
 - plus any other factors you believe relevant.
- D. **Appendix: Papers discussed** (printouts or photocopies, or URLs to articles)
- Note:** No need to describe details of the papers in the critique itself. References to specific points should use page number and approximate location (top, middle, bottom).

Note: A text file (pdf or Microsoft Word doc) and a presentation file (if applicable) must be emailed to the TA **before 11:00am on the last day of class**.

Marks will be reduced to 85% of their value each day (or part thereof) that the critique is late. This will be compounded daily. **After the final exam, the critique will not be accepted.**

4. Registration of papers

Each paper (influential or not) can be claimed by only one student. Any other discussion based on that source will be disregarded.

Note: *It will cost you 50 marks immediately if one source was previously claimed. If both were previously claimed, you would lose 100 marks.*

A paper belongs to the first student who claims it. **Please register your sources by emailing the TA asap (or entering your choice on the wiki).** You can change your choice as often as you wish. If you do, however, others can claim your old selection.

The first use encountered of a paper (either on the wiki, or in an oral presentation, or in a written critique) will be considered automatic assignment. You don't have to register your paper(s), but if you don't, you run the risk of being scooped.