



Assignment 2a: Author Instructions

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Abstract

The abstract should be short, concise, providing a clear outline of the following:

- Background (on Weighted voting and Blockchain consensus algorithms)
- Research question and corresponding scientific gap it solves (Weighted voting on 2nd generation algorithms)
- Contribution for addressing the problem in question
- Conclusion

1 Introduction

- Start by introducing the important concepts related to the research (such as blockchain consensus, weighted voting).
- Describe the story of identifying the scientific gap by presenting current research in the area chronologically.
- Clearly state the research question.
- State the contribution done to the research field.
- Write one paragraph in the end, outlining the structure of the paper and pointing out to the major sections.

2 Background

The **Background section** is split in multiple sections describing in depth the most important blockchain algorithms that constitute the basis of the research. Each section should:

- Introduce the algorithm and the innovation it introduces.
- Describe its importance in the research field.
- Outline the main characteristics of the algorithm such as formal mathematical description (if that is the case), communication phases and protocol properties (such as safety and liveness).

3 Methodology

Describe in depth the solution to the research question posed by the paper. Make sure to follow the guidelines below:

- Mention the type of research done (in this case experimental and quantitative)
- **For algorithmic solutions:**
 - Provide step-by-step outline of the major steps of the algorithm.
 - Mention the tech-stack used for implementing the solution.
 - Include any assumptions that have been done for reaching the presented conclusion.
- **For analytic solutions:**
 - Formally present the logic process followed for answering the research question.
 - Make sure to define any variable that is used during the proofs.

- Include any assumptions that have been done for reaching the presented conclusion.

- Highlight how the contribution helps answering the research question.
- Provide appropriate references.
- Be transparent on the methods used.

4 Experimental Setup and Results

- Describe in depth the environment used for performing experiments.
- Identify and describe meaningful performance metrics to be used for evaluating the contribution.
- Provide a guide on gathering, processing and obtaining results such that it can be followed easily and reproduced by any reader.
- Present results and discuss their graphical illustrations to point out possible advancements in the field, limitations, comparisons with existent solutions.

5 Responsible Research

- Discuss on the reproducibility of the research methods used.
- Reflect on the ethical impact of the research conducted.
- Critically analyse the transparency and possible ethical bias introduced by the solution proposed.

6 Discussion

- Provide a concrete and thorough comparison between the solution found and current developing research.
- Put in contrast the paper with one of the research projects conducted by fellow students and reflect on possible improvements.
- Discuss and highlight limitations (reference to Experimental Setup and Results section), advantages and disadvantages of the solution presented.

7 Conclusions and Future Work

This section should include:

- **Conclusion:**
 - Reiterate briefly on the research question.
 - Clearly outline the key parts of the contribution.
 - Present concisely and objectively the results entailed by the solution found.
- **Future work:**
 - Discuss possible improvements that can be introduced by future research.
 - Elaborate on how the limitations can be addressed by future studies.

8 General guidelines

- **Style**

- Use academic and formal writing style.
- Text should be understandable, no spelling errors, acceptable grammar and no lexical mistakes.
- **Citing:** Use a system for generating the bibliographic information automatically from your database (i.e., BibTex, Zotero, etc.) to ensure proper citation.
- **Abbreviations:** Explain what the abbreviation is the first time it is used.

- **Tables and figures:**

- Each figure has its own caption, placed below.
- Each table has its own caption, placed above.
- Captions are short, concise, clear and descriptive.
- They should be numbered in the order of referencing.
- They should be self-explainable.

A Appendix

Include supplementary material that is too lengthy, detailed, or distracting to be placed in the main body of the text.

References

The citation style used will be IEEE. Following the guidelines referencing of different formats would be the following

- **Book reference:** *Author initial. Last name, Book Title. City (and state if in US), Country: Publisher; Year.*
- **Website:** *Author initial. Last name. "Page title." Website Name. URL (accessed Month Day, Year).*
- **Journal article:** *Author initial. Last name, "Article title," Journal Name, vol. Volume, no. Number, pp. Page range, Month Year, DOI.*