Middle-of-the-road length title, plus a fun name that sticks in people's minds

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Abstract

The first sentence/phrase should be something that all readers agree with. The second should be something that many readers would find surprising, or wouldn't have thought about before; but it should follow from (or be supported by) the first sentence. Warm the reader up with context. State the problem, your approach and solution, and the main contributions of the paper. Include little if any background and motivation. Be factual but comprehensive. The material in the abstract should not be repeated later word for word in the paper.

This paper can be found at `https://accompanyingwebsite.baulab.info/`.

1 Introduction

Roughly one page total. One paragraph for each of the below. Organize each paragraph around a single concrete point stated in the first sentence that is then supported in the rest of the paragraph.

1. What is the problem?
2. Why is it interesting and important?
3. Why is it hard? (E.g., why do naive approaches fail?)
4. Why hasn't it been solved before? (Or, what's wrong with previous proposed solutions? How does mine differ?)
5. What are the key components of my approach and results? Also include any specific limitations.

1.1 Summary of Contributions

The major contributions of this paper are:

- Contribution 1
- Contribution 2
- Contribution 3

The rest of the paper is structured as follows: Section **??** describes Contribution 1. Section **??** explains Contribution 2. Finally, Contribution 3 is presented in Section **??**.

2 Related Work

Roughly 1 page. Good density of citations Loftus & Bau (2024) - not too sparse but not too crowded.

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Preprint. Under review.

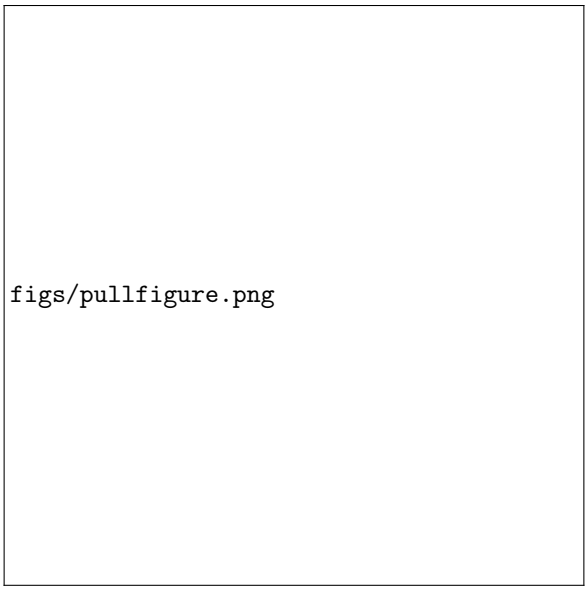

Figure 1: Well-designed pull/hook figure on page 1 or 2 to bring the reader in and convey the central point of the paper

Keep this here if related work can be short yet detailed enough, or if it's critical to take a strong defensive stance about previous work right away. In this case Related Work can be either a subsection at the end of the Introduction, or its own Section 2.

Put this section at the end if it can be summarized quickly early on (in the Introduction or Preliminaries), or if sufficient comparisons require the technical content of the paper. In this case Related Work should appear just before the Conclusions, possibly in a more general section "Discussion and Related Work".

3 First section

Organize the paper around a single core contribution with surgical precision. Do not add additional fluff.

Some general guidelines:

Guideline #1: A clear new important technical contribution should have been articulated by the time the reader finishes page 3 (i.e., a quarter of the way through the paper).

Guideline #2: Every section of the paper should tell a story. (Don't, however, fall into the common trap of telling the entire story of how you arrived at your results. Just tell the story of the results themselves.) The story should be linear, keeping the reader engaged at every step and looking forward to the next step. There should be no significant interruptions – those can go in the Appendix; see below.

Aside from these guidelines, which apply to every paper, the structure of the body varies a lot depending on content. Important components are:

- **Running Example**: When possible, use a running example throughout the paper. It can be introduced either as a subsection at the end of the Introduction, or its own Section 2 or 3 (depending on Related Work).
- **Preliminaries**: This section, which follows the Introduction and possibly Related Work and/or Running Example, sets up notation and terminology that is not part of the technical contribution. One important function of this section is to delineate material that's not original but is needed for the paper. Be concise – remember Guideline #1.

- **Content**: The meat of the paper includes algorithms, system descriptions, new language constructs, analyses, etc. Whenever possible use a "top-down" description: readers should be able to see where the material is going, and they should be able to skip ahead and still get the idea.

3.1 method explanation

Method/model description with technical section somewhere with math details.

3.2 more sections of the paper

Explain what is being done in the section. Explain what the core challenges are. Explain what a baseline approach is or what others have done before. Motivate and explain what I'm doing

3.3 more sections of the paper

Explain what is being done in the section. Explain what the core challenges are. Explain what a baseline approach is or what others have done before. Motivate and explain what I'm doing

4 Experiments

A set of experiments that usefully explore how good/interesting the method/model/central investigation of the paper is, and which tell a clear and cohesive story.

Results tables with lots of numbers and some of them **bold**.

Options for things to measure:

- runtime
- sensitivity to important parameters
- scalability in various aspects: data size, problem complexity, etc

Metric1	Metric2	Metric3	Metric4
Method1 (ours)	**0.011834**	**57.287**	0.99965
Method2	0.013030	56.450	**0.99959**
Method3	0.034077	47.778	0.99569

Table 1: Results table with lots of numbers and some of them bold

Options for things to show:

- Absolute performance
- Relative performance to naive approaches
- Relative performance to previous approaches
- Relative performance among different proposed approaches

5 Conclusion

Put in the conclusion everything that wants to have gone into the introduction, but wouldn't have made sense for lack of context. Should be a short summarizing paragraph. Under no circumstances should the paragraph simply repeat material from the Abstract or Introduction. In some cases it's possible to now make the original claims more concrete, e.g., by referring to quantitative performance results. Discuss open questions you'd like other researchers to think about. Likely only the 5ish people most interested in your paper will actually read this section, so it's worth somewhat tailoring to that audience. Unfortunately, paper reviewers might also read this section, so you can't tailor it too much. This section is most important when submitting to NIPS or ICML, sometimes you can skip it in other conferences.

Figure 2: System figure clearly showing technical details of measurements made by experiments.

6 Future Work

Show how the work new research directions. Use bullet lists. A couple of things to keep in mind:

- Say if we're actively engaged in follow-up work, say so. E.g.: "We are currently extending the algorithm to... blah blah, and preliminary results are encouraging." This statement serves to mark your territory.
- Conversely, be aware that some researchers look to Future Work sections for research topics.

7 Acknowledgements

Acknowledge anyone who contributed in any way: through discussions, feedback on drafts, implementation, etc. If in doubt about whether to include someone, include them.

References

Loftus, A. and Bau, D. Relevant paper that ideally cites people i can find at conferences. *Neural Information Processing Systems*, 2024.

8 Appendices

Appendices should contain detailed proofs and algorithms only. Appendices can be crucial for overlength papers, but are still useful otherwise. Think of appendices as random-access substantiation of underlying gory details. As a rule of thumb:

- Appendices should not contain any material necessary for understanding the contributions of the paper.
- Appendices should contain all material that most readers would not be interested in.