

View Meta-Reviews

Paper ID

2742

Paper Title

The Complexity of Morality: Checking Markov Blanket Consistency with DAGs via Morality

META-REVIEWER #1

META-REVIEW QUESTIONS

2. Please enter a detailed meta-review explaining your decision.

This paper has a small but nice theoretical result: the task of efficiently checking whether an undirected graph could have arisen from moralizing a Bayesian network, while already known to be NP-complete, can be efficiently solved if the maximum degree is 4; it remains NP-complete if maximum degree is 5. This is potentially useful, for example, if we have learned a Markov network (e.g., by Graphical lasso), and want to understand it better, perhaps as arising from a Bayes net.

The reviewers and this meta-reviewer all agree after reading the paper, the author reply, and one another's reviews that the paper suffers from a number of weaknesses including a lack of clarity (and accurate grammar) in writing (e.g., the division between text and definitions seems entirely arbitrary for much of the paper), a need for more motivation early (e.g., even using my first paragraph above would be an improvement, but one could do much better than that), more background material and references, and a check of all results and proofs because the reviewers cite several minor errors. The author reply, while OK, was not deemed especially responsive to the critiques.

Some reviewers felt the contribution is minor; I think it is above the bar and wish only that the paper presented the contribution much better. With some more work on presentation this could be a strong paper. While the following is not necessary, carrying out an application showing the utility of the method could turn this into an exceptional paper. Markov network learning algorithms (e.g. with lasso) often limit vertex degree effectively anyway, making this a potentially useful result.

7. I agree to keep the paper and code submissions confidential, and delete any submitted code at the end of the review cycle to comply with the confidentiality requirement.

Agreement accepted
