

Reviewer #2**Questions****1. [Summary] Please summarize the main claims/contributions of the paper in your own words.**

The paper proposes a collaborative memory network, which is essentially a combination of memory network for text and collaborative filtering for ratings.

2. [Relevance] Is this paper relevant to an AI audience?

Of limited interest to an AI audience

3. [Significance] Are the results significant?

Not significant

4. [Novelty] Are the problems or approaches novel?

Not novel

5. [Soundness] Is the paper technically sound?

Has minor errors

6. [Evaluation] Are claims well-supported by theoretical analysis or experimental results?

Somewhat weak

7. [Clarity] Is the paper well-organized and clearly written?

Satisfactory

8. [Detailed Comments] Please elaborate on your assessments and provide constructive feedback.

The paper proposes a collaborative memory network, which is essentially a combination of memory network for text and collaborative filtering for ratings.

The novelty of the work is limited. It uses memory network for recommendation, which itself is not new. As stated in the paper, it's been used in Hu et al 2018, and the main difference is that this paper uses a shallower network.

There are also missing references and baselines:

<http://ir.hit.edu.cn/~dytang/paper/ijcai2015/ijcai15.pdf>

<http://www.wanghao.in/CDL.htm>

The experiments are limited, with only two datasets. There is no clear justification why the two datasets are particularly suitable or insightful. I don't see the connection between Amazon Men and Mobile phones. There are many Amazon datasets, why this category in particular?

9. [QUESTIONS FOR THE AUTHORS] Please provide questions for authors to address during the author feedback period.

Can you provide convincing justification why the proposed method performs better than the baselines? The current arguments just rely on stated numbers, without clear justifications or reasoning.

10. [OVERALL SCORE]

4 - Reject

11. [CONFIDENCE]

Reviewer is knowledgeable in the area

Reviewer #3**Questions****1. [Summary] Please summarize the main claims/contributions of the paper in your own words.**

The authors have described a neural framework that integrates user-item interaction with text information. Their approach considers user behavior and semantic factors to calculate the probability of whether a user like an item. They conduct experiments on two official datasets, and the results demonstrate the proposed method is efficient, and also outperforms the compared methods in terms of three ranking metrics.

2. [Relevance] Is this paper relevant to an AI audience?

Relevant to researchers in subareas only

3. [Significance] Are the results significant?

Significant

4. [Novelty] Are the problems or approaches novel?

Novel

5. [Soundness] Is the paper technically sound?

Technically sound

6. [Evaluation] Are claims well-supported by theoretical analysis or experimental results?

Sufficient

7. [Clarity] Is the paper well-organized and clearly written?

Good

8. [Detailed Comments] Please elaborate on your assessments and provide constructive feedback.

Overall, this paper is well-organized, I think that it is an interesting work and includes some innovative ideas.

9. [QUESTIONS FOR THE AUTHORS] Please provide questions for authors to address during the author feedback period.

1. The method is a bit unclear: The process for combining result of MemNet and CFNet (i.e. Joint Rep) should be further explained.

2. Since attention model in the memory network is able to learn word semantics for discriminating which words are highly relevant to the user preferences. It would be more interesting if the authors can further demonstrate the results of attention mechanism via visualization.

3. The authors use behavior factor (clicking links) and respective semantic information (product information) for determining recommendation likability. This assumption is may not be norm while selecting an item on users part. Often people select items without adhering to product information. Therefore there may not always be a strong correlation between behavior and product information relevance. How does this model account for such discrepancies? Is there any variable attention account given separately to the two factors during classification?

4. While describing MemNet, authors have made separate references to memory slots and external memories. Could the respective descriptions be elaborated to avoid confusion? Either appears to be the same embedding vector matrix corresponding to product description. What is the representational difference between the two?

5. For a (u, i) pair $\rightarrow 1$, x_u and x_i will be evaluated over a given doc d_{ui} . Using on equation 8 and 9, attention is identified for the selective relevant words. Based on eq 8 descriptions, the attention for embedding 'j' is achieved via additive feature weight from x_u and x_i . Since matrix description for either will be same for a given (u, i) pair, how does the equation calculate bias for word 'j'. In essence, we are simply using word embedding in softmax setting to determine relevant words. It isn't clear how (u,i) pair preference influences the selection of relevant words?

10. [OVERALL SCORE]

7 - Accept

11. [CONFIDENCE]

Reviewer is knowledgeable in the area

Reviewer #4

1. [Summary] Please summarize the main claims/contributions of the paper in your own words.

Strong point

1. Thorough literature review
2. Well-written
3. Memory network design

Weak point

1. Incremental version of LCMR
2. Lack of experimental comparison with the state-of-the-arts
3. Lack of qualitative evaluation

2. [Relevance] Is this paper relevant to an AI audience?

Likely to be of interest to a large proportion of the community

3. [Significance] Are the results significant?

Moderately significant

4. [Novelty] Are the problems or approaches novel?

Somewhat novel or somewhat incremental

5. [Soundness] Is the paper technically sound?

Technically sound

6. [Evaluation] Are claims well-supported by theoretical analysis or experimental results?

Somewhat weak

7. [Clarity] Is the paper well-organized and clearly written?

Good

8. [Detailed Comments] Please elaborate on your assessments and provide constructive feedback.

This paper tries to jointly model both general CF for rating information and text understanding module while considering the interaction of user and item via MemNet. Specifically, they combine the existing MLP in NeuCF and a variant of LCMR. Interestingly, this paper tries to capture both user and item side-aspect attention with two memories for user and item. The proposed attention scheme is a novel compared with the previous approach, LCMR.

However, the motivation and structure of this paper is quite similar to the previous paper, LCMR, and this paper does not contain performance results of other the state-of-the-arts, which consider text information and rating information even though this paper mention them in the related work section. In my opinion, this paper should provide the results.

Moreover, this paper does not provide any qualitative evaluation result, and thus I cannot be sure that MemNet is indeed beneficial to understand unstructured text for estimating users' preferences to items compared with other methods.

Overall, I think that this paper is not ready to be published yet.

9. [QUESTIONS FOR THE AUTHORS] Please provide questions for authors to address during the author feedback period.

None

10. [OVERALL SCORE]

5 - Marginally below threshold

11. [CONFIDENCE]

Reviewer is knowledgeable in the area