COSC 6335*“Data Mining”*

ProblemSet3 Fall 2022

Reviewing Data Mining Papers

Deadlines: Your Task5 report is due on Friday, Dec.2, 11:59p; however, some Kritik peer reviewing of other groups’ submissions still needs to be done in the window Dec. 4-6.

Last updated: November 27, 7p

Task 5: Reviewing a Data Mining Paper

Peer-Reviewed Group Project

In this task you will review the paper which won the ICDM 2021 Best Paper Award “A Statistically-Guided Deep Network Transformation and Moderation Framework for Data with Spatial Heterogeneity by Yiqun Xie, Erhu He, Xiaowei Jia, Han Bao, Xun Zhou, Rahul Ghosh, and Praveen Ravirathinam”—Paper Link:

<https://terpconnect.umd.edu/~xie/papers/Spatial_ICDM_nsf.pdf>

We assume that the Task3 groups we formed in October 2022 will conduct Task5; if you are having a problem with this, inform Mahin and Dr. Eick about this matter before Nov. 8!

After you understood what this paper is all about, conduct a web search looking for papers with similar themes as the paper you need to review. Next, write your review, complying with the following review template:

1. Summarize what the research area and the topic of the paper is and what its contributions are 3-4 paragraphs); *write in a neutral or positive tone no matter how bad the paper is*!
2. Evaluate the contributions of the paper and its writing (at 3-6 paragraphs); follow the questions and criteria of the KDD 2012 Reviewing Criteria (you can find at the end of this document as an appendix). In particular, assess the **novelty**, **technical quality**, **significance and impact**, and **clarity of writing of the paper**. If the paper makes contributions that do not fit into these 4 criteria, summarize those in an optional “*other contributions” paragraph*)
3. What are the 3 strongest points of the paper (just one sentence for each point)?
4. What are the 1-3 weakest points of the paper (just one sentence for each point)?
5. Assess the educational value of the paper for graduate students (2-3 paragraphs)! Is the paper a good starting point to do work/research in the area? Does the paper do a good job in introducing the goals and objectives and the methods of the field of research? Does the paper do a good job in getting graduate students excited about working in the research field? What did you learn from reading the paper?
6. Numbered List of Specific Comments and Questions (e.g. *the claim stated in the second paragraph is not clear; I do not agree with the conclusion in the third paragraph…, symbol x was never defined, it is not clear to me what the purpose of Section 4.3.2 is; the author introduced formulas 2.4 that are never used in the remainder of the paper*, I do not understand what the term x means,…). Each review should have 4-7 specific questions/comments!
7. Summarize the findings of the web-search you conducted; also evaluate what you found and how it relates to the paper your reviewed (3-6 paragraphs)
8. Broader Impact (2-3 paragraphs); what real world applications will arise from this work? Assess how the paper will help society to make earth a better place! Does the paper foster new research/new approaches that could be investigated in future research? Does it establish new connections between different, originally disconnected research communities?
9. The paper won the ICDM 10-year Highest Impact Award. Explain why, you believe, this happened! (1-2 paragraphs)
10. Give the paper a numerical score (1-7) using the KDD-2012 Criteria (described in appendix 1); 7 scores (add scores for educational value, broader impact and overall score!)!
11. Assess the usefulness of Task5! (1 paragraph)!

**Rubrics**:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Level 0 | Level 1 | Level 2 | Level 3 | Level 4 | Weight |
| Summary:  Research Area,  Topic,  Contributions,  Tone | All four points identified by the reviewer group are full of errors and rude | One point out of four identified by the reviewer group have many errors  And tone is slightly rude | Two points out of four identified by the reviewer group have some error  And tone is mild rude | Three points out of four identified by the reviewer group have almost no error And tone is mildly motivating | All four points identified by the reviewer group have almost no error And tone is motivating | 3 |
| Evaluating Contributions:  **novelty**,  **technical quality**,  **significance and impact**,  and **clarity of writing of the paper** | All four points identified by the reviewer group are full of errors | One point out of four identified by the reviewer group have many errors | Two points out of four identified by the reviewer group have some error | Three points out of four identified by the reviewer group have almost no error | All four points identified by the reviewer group have almost no error | 5 |
| Strongest Points | None of the points are valid | All three points are valid but weak | One out of three points are valid and strong | Two out of three points are valid and strong | All three points are valid and strong | 2 |
| Weakest Points | None of the points are valid | All three points are valid but weak | One out of three points are valid and strong | Two out of three points are valid and strong | All three points are valid and strong | 2 |
| Assess the educational value of the paper for graduate students (2-3 paragraphs)!  Is the paper a good starting point to do work/research in the area?  Does the paper do a good job in introducing the goals and objectives and the methods of the field of research?  Does the paper do a good job in getting graduate students excited about working in the research field?  What did you learn from reading the paper? | One or zero out of five points discussed by the reviewer group are well written | Two out of five points discussed by the reviewer group are well written | Three out of five points discussed by the reviewer group are well written | Four out of five points discussed by the reviewer group are well written | All five points discussed by the reviewer group are well written | 3 |
| Specific Comments and Questions | No comments are valid | Most of the comments are weak or invalid | Half of the comments are valid and strong, other half are weak or invalid | Most comments are valid and strong | All comments are valid and strong | 2 |
| Summarize the findings of the web-search you conducted; also evaluate what you found and how it relates to the paper your reviewed | No proper web-search is done by the reviewer group | Reviewer group has proof of doing ordinary amount of web search and the discussion from the web search are also ordinary | Reviewer group has proof of doing average amount of web search and the discussion from the web search are also average | Reviewer group has proof of doing somewhat good amount of web search and the discussion from the web search are okay | Reviewer group has proof of doing extensive web search and the discussion from the web search are proper | 2 |
| Broader Impact (2-3 paragraphs); what real world applications will arise from this work?  Assess how the paper will help society to make earth a better place!  Does the paper foster new research/new approaches that could be investigated in future research?  Does it establish new connections between different, originally disconnected research communities? | All four points identified by the reviewer group are full of errors | One out of four points discussed by the reviewer group are well written and have almost no error | Two out of four points discussed by the reviewer group are well written and have almost no error | Three out of four points discussed by the reviewer group are well written and have almost no error | All four points discussed by the reviewer group are well written and have almost no error | 5 |
| The paper won the ICDM 10-year Highest Impact Award. Explain why, you believe, this happened! | Discussion made by the reviewer group is full of erroneous claims | Discussion made by the reviewer group is below average but huge amount of erroneous claims | Discussion made by the reviewer group is average but has many erroneous claims | Discussion made by the reviewer group is okay but has some errors | Discussion made by the reviewer group is valid and strong | 2 |
| Give the paper a numerical score (1-7) using the KDD-2012 | The rank is totally wrong | The rank is very far from the justified rank | The rank is slightly far from the justified rank | The rank is very close from the justified rank | The rank is justified and okay | 1 |
| Assess the usefulness of Task5 | Discussion made by the reviewer group is full of erroneous claims | Discussion made by the reviewer group is below average but huge amount of erroneous claims | Discussion made by the reviewer group is average but has many erroneous claims | Discussion made by the reviewer group is okay but has some errors | Discussion made by the reviewer group is valid and strong | 2 |