Peer Review For Innovative Project for Group G08

Title of Paper: Innovative Project group G08

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Reviewer Team (Name, Student Ids): Nilu Thakur, Prasad Sriram

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SUMMARY:

Does the paper clearly identify the problem it is addressing?

There is a slight discord between the problem described in the “problem statement” section of the project draft and the actual problem addressed by this paper. Though, the problem domain is described properly but the actual problem tackled by this paper is little unclear.

For example, after reading the problem section part, the readers get an impression that, the actual problem the authors are trying to solve are:

a) The location anonymizer must cloak the exact user location in spatial region satisfying k-anonymity.

But later it becomes clear that idea of spatial cloaking to preserve location privacy is not novel and this paper mainly works towards proposing an attack-aware spatial cloaking.

Also, there is not much said about the two major privacy attack models: location distribution attack model and movement-based attack model. A brief explanation of these two models would have made more sense to the readers.

Does the paper clearly explain related work and their limitations?

Related work has been described nicely with the references given for each topic. The k-anonymity model and its limitations have been described in a very clear manner. Also, it has been nicely explained that why existing k-anonymity model cannot be applied in case of location based
services. But how the proposed k-anonymity model is different than the existing model is not clear or rather the proposed k-anonymity model has not been explained anywhere in the draft.

They talk about an enhanced spatial cloaking algorithm that will be based on existing spatial cloaking algorithm. And here again though they describe the existing cloaking algorithm in brief but how their enhanced spatial cloaking algorithm is different is not clear. We expect that the final draft will pinpoint exactly the area in which their proposed algorithm is different than the existing algorithm.

In addition to that, the author in introduction section talks about privacy aware query processor, which would be capable of processing new privacy aware query types, e.g., private queries over public data, public queries over private data and private queries over private data, but in later part of the draft this topic seems to have been forgotten completely. And related work in this area has not been explained. In the final draft, a little information about how and what approach the author plans to choose in this area would be expected by readers.

**Does the paper identify its key contributions?**

To us understanding the key contribution part was the most difficult, as there is no section in the draft that clearly defines the key contribution of the paper. This was mainly due to the fact the problems described in the problem statement section and problem described later in the related work and contribution section were overlapping and not very clear with respect to novelty.

For example, they talk about their proposed solution being novel considering privacy attack model but before this statement, they do not describe or talk about privacy attack model in related work section. Also, they mention filter-refinement technique but they nowhere described it before.

Therefore, the key contributions are little weak, in the sense that it’s difficult for readers to know what exactly are the contributions and what are the novel concepts proposed by the paper.
Does the paper present any evidence to support the contribution claim?
They do mention that the idea of spatial cloaking to preserve location privacy is not novel and no existing spatial algorithm considers privacy attack model. But they do not provide any reference to support this statement. Also, about their proposed attack-aware spatial cloaking algorithm, neither they provide any evidence nor they explain their proposed algorithm.

TECHNICAL EVALUATION:

Is the literature survey complete?
Yes, the literature survey seems complete and includes almost all of the related topics and many more. Although, with one exception that we did not see much about privacy attack models.

Is the work novel relative to the literature? Explain.

As a reviewer do you agree with the contribution claims? Explain.
The proposed algorithm is not explained in the draft so it is difficult to judge the contribution claim but their claim of saying that no existing spatial algorithm considers privacy attack model seems true.

READABILITY AND ORGANIZATION:

Is the paper easy to read and understand to students in this course (Csci 8715)?
Yes, it is easy to read and understand, though as stated before some areas have overlapping concerns and they need refinement. For example, identification of the real problem and contribution area need better organization.

Is the paper length reasonable?
For a rough draft, the length is reasonable.

Does it include sufficient number of figures and tables?
None in the rough draft but hopefully they will include figures and tables in the final draft

STRENGTHS:
What are the strengths of this paper?
- Related work is explained nicely
- Lots of references
- Assumptions are described beforehand

AREAS FOR IMPROVEMENT:
How can this paper be improved? If you were to rewrite this paper, what revisions would you consider?
- Adding more detail in the Introduction part with some examples and figures
- Rewriting the problem statement part to clearly differentiate between the general domain problem and problem addressed by this paper
- Making contribution claim more clear
- Adding some more details about privacy attack model
- Adding details about the proposed algorithm