**G9 Review: Indexing Uncertain Spatio-Temporal Data**

**Gayathri:**

Overall the presentation flow is very good and very informative. It is also very easy to understand but I could not see any examples out of the paper. The hierarchical level of definition what uncertain data is first and what an uncertain spatial data is next is good one. The problem is well defined and the applications of it are also given. The diagrams provided to explain an example about the application for this approach makes it easy to understand about the problem. The key problem of how to evaluate a query asking for if an object intersects a spatio-temporal window is well identified and explained. The previous strategies that have been used are given out but not much in detail. The formal definition of the problem along with the diagram explains the problem very well. The challenges of the uncertain data in this case such as location changing and the data being discrete are well understood and explained. May be an example for each of these with real world data will give more intuitive into the challenges. The diagram to show if all the trajectories should be examined is very nice. The assumptions made by the authors are understood well by the presenters and have presented them as concise points too. The critiques to the assumptions made by the authors is very well thought of. Information of how validations are done with different types of data is well explained. The approach of Spatio Temporal Approximation and is well explained with diagrams. Probabilistic UST-Object Approximation and where does it use Markov Chain Model is informative. The Filter step and the Refine step in the Probabilistic approach are well differentiated. Brief information of the type of data gives a very good insight of what real world input is. The strengths and weaknesses of the validation strategies show that the presenters have a very good hold of the validation strategies presented in the paper. In the category of the query performance with synthetic data, the first part which explains the comparison between Scan and R* tree has separated points which explain the comparison well. But the second part which explains the advantages of Probabilistic filter is not clear. The similarities between performance while testing with synthetic data and real data is well identified so that the entire thing is not repeated again. I completely agree with the authors in having better organization of contents. As the authors said, comparing their strategy with any other related and similar work within the same environment and same data would have given more insight into how much better or worse is the approach proposed by authors. The alternative solutions for the problem also reflect on presenters understanding of the paper.

**Suggestions:**

Relating the challenges and explaining them in terms of real data might provide more intuitive into what the exact challenges are.

Try explaining the advantages of Probabilistic features bit more clearly.

The paper doesn’t seem to have what the presenters would like to retain in the paper.
Yumeng:

Summary

The paper is trying to address the issue of routing in a multimodal transportation system. It does so by introducing a set of new features and concepts to the traditional shortest-path algorithm and comes up with a model to better cater the problem at hand. Among the novel ideas are the introduction of probability as part of the cost consideration and an expansion to the Spatial-Temporal Query Language (STQL). The paper adopts a descriptive fashion, explaining its ideas for the most part without much theoretical proof or application details. The reviewers come up with several assumptions that could potentially weaken the value of the ideas in the paper. Most of the assumptions come from a simplification of the real-life scenario. In addition, the reviewers also question the applicability of the paper, as it might not take into consideration actual user preference, according to the reviewers, and might have made the problem more complicated than it needs to be.

Improvement Suggestions

Narrative

The problem definition in the 'Major contribution and Key concepts' section states that the paper lays out a subset of the routing issues, while it seems that the paper actually is focusing on modeling urban transportation systems in a database. A clarification or a better definition here would help.

I like the way the concepts are explained with examples, but I believe more concepts, like the concept of a trip with its constraints, need to be presented.

It would really help if a little more summary of what the paper does is presented, and go back to it when discussing things like assumptions made in the paper.

Slides

I think it does a good job leading our thoughts with the question/titles.

On some pages the text could be shortened.

Some examples to illustrate/test the audience’s understanding would be helpful.