**G4 Review: A Data Model for Trip Planning in Multimodal Transportation Systems**

**Gayathri:**

The paper is based on looking into the urban transportation system that has coherent data structure and different variables. The paper proposes a solution of combining spatio temporal data, moving objects, and graph based databases to have multi modal transportation idea and in less time.

The review is well concentrated on what the problem is that the authors of the paper are trying to look and also have provided a specific example by which I could understand of what is the problem in detail and what is the requirement of the users. The presentation is good in terms of brief content on the slides and the apt content that can be understood well. The examples of the type of the query and the SQL statement for the query is well provided. The headlines of the slides are well to some extent but many slides had same headings by which it seems a bit confusing. Three different key concepts regarding Identifying Key variables, Graph model and addition of specific operators are well given out. These try to concentrate on the important concepts given out by the authors of the paper. Assumption that the process would work on much larger dataset would have been good if explained in more detail. The suggestions on what would be changed and what would be retained was also well provided. I think the second suggestion of creating GUI would have been much better with more explanation of what GUI they would like to create.

**Suggestions regarding presentation:**

Have better headings which will explain what’s in the slide more effectively. It says “what’s the problem” when you are trying to say what is the solution suggested by the authors.

Diagrams for explaining the queries or the problem would have been more understandable.

Along with the query, the differentiation of each constraint for each query will make it more understandable.

**Yumeng:**

**Summary**

This paper was written to address the above issue by proposing novel approximation techniques to probabilistically bound the uncertain movement of objects, which allows for efficient and effective filtering during query evaluation using an hierarchical index structure. As preliminaries, the paper defines the type of spatial-temporal data it is trying to index, introduces a common uncertain data model called the necklace. One key assumption of the paper is that the uncertain movement of the object between consecutive observations can be modeled by a Markov-Chain model. To overcome the potential problems it might incur, each object is associated with an uncertain object trajectory. The paper focuses mainly on selection queries. To make the solution feasible, the paper introduces two filters. The first one is spatio-temporal filter based on the necklace model. It is used to prune any diamonds that do not intersect with the query window. The second one is probabilistic UST-object approximation, which is used to exclude any unlikely outliers when approximating the original diamond object. Finally, the paper introduces an index structure called the UST-tree. It is an R-tree based
hierarchical index structure. The paper does a good job in validate its proposed method by examining it both on synthesized and real data.

**Improvement Suggestions:**

*Narrative*

I like the detailed explanation of the ideas of the paper. However, it might help if the reviewers could further shorten the summary part to make it more concise.

It would be better if more critical reviews could be written on the paper, like in which area the authors' method might need more work.

I like the simple exercise attached at the end

*Slides*

I like the color and theme of the slides, as well as the overall layout of each page.

The slides might be a little overloaded with text. It would help if keywords are used instead of whole sentences.

More diagrams and graphs would have helped explain the idea better.