Review for the report: Optimization Techniques for Train Route Selection

1 Summary

In this report, the author explores various techniques for a search problem revolving around train route selection. In this report, the technical details and the solution are stated in a detailed way. Although the explanation is very detailed, this report lacks some visual representation of the data. The chapters included as a part of this report guide the reader very well from problem to the proposed solution to the results which are discussed at the end.

2 Critical Evaluation

In the abstract section, the author has specified the work and approach they followed as a part of the problem they solved. Instead of highlighting the efforts and approach, it is better to keep the abstract crisp. The author can explain what can the reader expect in terms of how and in what ways search algorithms help to solve symbolic AI problems when they will delve into this report further.

In the introduction, the research question and the contributions of the report are pinned down very well which helps the reader to visualize what is the problem and what could be a proposed solution.

Regarding the basics of some concepts listed in the report, it could be explained a bit in detail. For example, when writing graph theory basics, it is helpful if we add an image of a graph where the author can see how are vertices and edges positioned. For the cost function, I would add a basic definition initially whereas the author has listed down the cost function which are used as a part of the proposed solution. For the CSV format, please do attach a snapshot of the actual file as an example.

The problem description is explained in detail and various cost functions are also mentioned.

The author states that a dictionary was used to represent the data given in the CSV format. In my opinion, it is a better idea to show an example of CSV data and the corresponding dictionary. The price cost function and the alterations made for it in the base algorithm are well explained, but lacks an example. Also, it is better to explain the terms like standard weight. Similarly, an example for the arrival time cost function would make the explanation more understandable and robust.

In addition to the computation time as a measure for performance of the algorithm, please do mention the performance in terms of complexity. The graph comprehends the written information.

The author mentions the future work to reduce the time complexity in case of price and arrival time cost functions, but some details on how this can be achieved would be helpful.

3 Conclusion

All in all, this report guides the reader in a flow from problem description, the proposed solution and the performance in multiple datasets. However, to write a report which includes some more definition on the basic terms, some visuals and examples to support your argument would make the report stronger, attractive and robust.

4 Technical notes to the author

In chapter 4: CVS written instead of CSV (Possible typo)

In my opinion, chapter 4 could be renamed to “Data representation” instead of “Data pre-processing”