<u>**Peer Review**</u> (By: Group 40; To: Group 43)

<u>**Summary**</u>
The paper introduces the need for efficient access methods for big data, discusses comparing different types of SFCs, aims to answer research questions related to scalability issues and algorithm complexity, and employs design science research (DSR) as the methodology. The methodology used in the study is design science research (DSR) as the primary approach, involving the development and deployment of an artefact, with an iterative nature, to explore research questions. Real-world data obtained from a car drive will be analysed, focusing on different events in the car's navigation. The study will use a Python environment with the Z-curve library, involving the generation of synthetic data from a simulator and the use of descriptive statistics to evaluate and compare test results.

<u>**Positive Points**</u>
- Good Illustrations of the problem and related work.
- Very clear methodology and time plan.
- Clear descriptions of related and inspired work.
- Very well structured overall and the text is good.
- Impressed with the use of complex sentences with no grammatical errors in the Introduction section.

<u>**Negative Points**</u>
- The introduction states some points at the end of the section which lacks references. Overall there was a lack of references, but it wasn't bad, just potential for it to be better.
- The introduction also doesn't introduce the topic to the reader with a very clear background, it sort of jumps right into it with high velocity. A little bit of more background can help the reader understand more clearly what is being introduced. **E.g. What is the space-filling curve?**
- Related work section is too small (consequently, the document is only 3 pages)
- The paper doesn't explain or motivate its choice of methodology being used.

<u>**Alternatives and Extensions**</u>
(DSR) is a great choice of methodology for the research questions proposed. Although DSR may be a strong methodology for RQ2 and RQ3, RQ1 is a general problem that can be more effectively researched through a case study. If a company has a range of scales in which data is queried, it would be interesting to see how in different ranges, the same algorithm performs. Same thing cannot be so easily achieved with limited resources available at hand when applying DSR.

<u>**Detailed Points**</u>
- There were a few grammatical errors with ", and" being utilised. And some active voices were used in certain places, which was confusing. Specifically "our algorithm".
- Some sentences didn't add up. E.g. "*which may or may not generalize as well especially outside of the automotive industry*"**(External validity section).**
- Use of informal words doesn't look good in a scientific paper. E.g. "fight, culprits **(Internal Validity section)**".
- References should be used at the end of a sentence. On line 2, in the Introduction section, reference '[4]' is used at the start.
- Maybe it is better to mention 'according to the authors' and then the reference below:
*"Also, as the dimensionality of the data increases, the effectiveness of SFC in preserving locality diminishes according to [5]." **(Introduction Section)***
This is because sentences should sound complete even without the reference.