Literature Survey

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1. Introduction:

- We plan to visually analyze the user experience on a website through visualization tools which would be useful for business, website developers, and internet provider and their customers.
- Previous work in this area provides analysis and ranking of websites based on business strategies.
- Our work focuses on the visual analysis of websites based on the user experience by comparing important user-centric metrics like Speed Index and load time with the most popular 100 websites from Alexa.
- We would be plugging in the visualization tool – Sitespeed.io to measure the performance metrics of the websites. It would test websites using real browsers, simulating real user connectivity and collect important user-centric metrics like Speed Index.
- The tool would analyze how the webpage is built and give feedback on how you can make it faster for the end user.

2. Previous Work:

We would be reviewing past work in website performance analysis and website rankings to explain the motivation of our proposal.

1. Muhtaseb, R., Lakiotaki, K., & Matsatsinis, N. (2012). Applying a multicriteria satisfaction analysis approach based on user preferences to rank usability attributes in e-tourism websites

- The purpose of this paper is to identify the factors affecting e-commerce website usability to analyze the role of those factors in increasing the effectiveness of the websites.
- It uses a Multicriteria Satisfaction Analysis (MUSA) method to rank usability attributes in websites based on their competitiveness importance.
- The study also discusses the factors influencing websites usability – Interactivity, Personalization, Content, Learnability, Design-structure, Navigation and Performance.
- They present the satisfaction indices, criteria weights, demand indices and impact values for the six criteria mentioned above and the websites.

- It would help the website developers to determine the specific usability attributes that are more crucial to the overall usability and user satisfaction of a website.

2. **Tsai, W.H., Chou, W.C. and Lai, C.W. (2010), "An effective evaluation model and improvement analysis for national park websites: a case study of Taiwan", Tourism Management, Vol. 31 No. 6, pp. 936-952.**

- This study proposes a model for evaluating national park websites. The model applies the Decision-Making Trial and Evaluation Laboratory (DEMATEL) to resolve the interdependencies between evaluation criteria.
- Next, it uses the Analytic Network Process (ANP) to compute weights for each criterion.
- The results show that each national park website must be improved to become a high-ranked website. Furthermore, the weight-variance analysis suggests actions based on two-dimensional maps for improving website quality.
- This study contributes to practical applications in terms of providing worthwhile recommendations for building an ideal website.

Additional References on Website Ranking lists:

1. **Lo, B.W.N., and R.S. Sedhain. 2006. "How Reliable are Web Site Rankings? Implications for e-Business Advertising and Internet Research." Issues in Information Systems 7 (2): 233– 38.**

- This study evaluates the publicly available websites ranking lists by observing the similarities and differences among them to determine how reliable they are.
- Several metrics are used to measure the concordance and discordance of these lists. The effect of list size was investigated.
- It would help the website developers to determine usability attributes which are more crucial to the user satisfaction and overall usability of a website.

2. **V. L. Pochat, T. V. Goethem, and W. Joosen, "Rigging research results by manipulating top websites rankings," 2018.**

- The study examines the important shortcomings of current websites rankings. It warns the research community for a more careful approach before using these lists.

- The authors compare the four main rankings used in recent studies in terms of their agreement with each other, stability, representation bias and potential impact on research cases.
- Mainly compare web ranking tools such as Alexa, Cisco Umbrella, Majestic, and Quantcast. Based on the result of the paper, Alexa, Majestic, and Quantcast have the same result of interception while Cisco Umbrella presents a different result.
- They illustrate unique ways to manipulate the rankings and bend research results to their will and demonstrate that the research community should exercise more caution when selecting and using these rankings.

3. Conclusion:

Difference/ Similarity with Reference 1:

- The objective of our project proposal of ranking and analysis of websites based on user experience is very similar to the work- "Applying a multicriteria satisfaction analysis approach based on user preferences to rank usability attributes in e-tourism websites".
- The difference between the two works is the methodology followed to achieve the goal. We plan to focus on parameters like speed index and load time to rank the websites. We also would visualize the results using an open source tool – sitespeed.io to get feedback to make it faster for the end user.
- However, the reference focuses on the analysis of websites based on the user experience by testing parameters such as Interactivity, Personalization, Content, Learnability, Design- structure, Navigation and Performance and providing satisfaction indices, criteria weights, demand indices and impact values for the websites.

Difference/ Similarity with Reference 2:

- The objective of our project proposal of ranking and analysis of websites based on user experience is also very similar to the work- "An effective evaluation model and improvement analysis for national park websites: a case study of Taiwan" except that it uses the Analytic Network Process (ANP) to compute weights for each criterion required to measure the performance.
- Our proposal is simple and less sophisticated so that it can be used easily by an end user. It can be used by the end user to get feedback to improve the metrics which are lowering the performance of the websites.

Motivation from additional references on website rankings:

The additional references provided which check the reliability of various web page ranking lists motivate for a proper evaluation and comparison of these ranking lists against

each other and then decide our standard against which the websites parameters would be compared.