Proposal

Analysis for 2015 Vast Challenge: Mayhem at Dinofun

For the final paper I’ll be providing analysis on the 2015 Vast Challenge: Mayhem at Dinofun World which included 2 mini challenges and a grand challenge. Mini-Challenge 1 dataset contained information regarding movements for paying park visitors throughout the park. Using that data, they had to categorize people into different groups and see if there are any particular pattern with the help of different visualization techniques. For Mini-Challenge 2 the teams were given the park communication data for three days Friday, Saturday and Sunday this data contained information about communication among paying park visitors, as well as between the visitors and park services. Each team had done a comprehensive evaluation in order to come up with a solution using a wide range of visual analytical tools present like Visio, tableau, excel etc. Most of teams developed their own visual analytics tool in order to explain the various patterns they could find in the dataset. Many of them implemented various visual analytics algorithms like brushing to make an inference on different group types and also path finding algorithm using the map that was provided to them. Besides these there may be many more different visual algorithms that may have been implemented in the solutions provided which can be analyzed further to see how each visualization has its own benefits in terms of showing detailed patterns, detecting subtle features etc. The research papers provided below has the necessary information about various different tools and methods to help in analyzing many different components of the challenge. For example, reference paper [2] talks about movement analysis in visualization which can help in looking at data from different perspectives. The dataset provided in the Mini-Challenge 1 consists of movement data of people throughout the park which can be used to show trajectories of various groups which helps in knowing which places of the park were visited. The trajectories can be further be viewed as set of points which can help in analyzing other dynamic attributes such as time. The paper [2] provides a brief overview on how to use these dynamic attributes which can help in analyzing this type of data. This paper will give a brief overview of the 2015 Vast Challenge on the grounds of the different visual algorithms that have been implemented, analyzing each solution stating their strengths and weaknesses and an overview of the challenge.

Reference:

1. W. Cui, "Visual Analytics: A Comprehensive Overview," in *IEEE Access*, vol. 7, pp. 81555-81573, 2019, doi: 10.1109/ACCESS.2019.2923736.
2. Andrienko, N., & Andrienko, G. (2013). Visual analytics of movement: An overview of methods, tools and procedures. *Information Visualization*, *12*(1), 3–24. <https://doi.org/10.1177/1473871612457601>.
3. Sun, G. D., Wu, Y. C., Liang, R. H., & Liu, S. X. (2013). A survey of visual analytics techniques and applications: State-of-the-art research and future challenges. *Journal of Computer Science and Technology*, *28*(5), 852-867.
4. Santhi, K. and Reddy, Rama Mohan, Critical Analysis of Big Visual Analytics: A Survey (February 7, 2018). 2018 IADS International Conference on Computing, Communications & Data Engineering (CCODE), Available at SSRN: <https://ssrn.com/abstract=3200438>