An Awesome Title

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Abstract— Some place holder text...

Index Terms—High-dimensional data, Decision trees, Visual Analytics

1 Introduction

Visual Explanations...

Multivariate explanations as a worldview task [1] often not supported by visualization tools. However, their definition is limited in scope to correlation models involving more than two measures...

In particular, we propose a selection method for :

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- Comparisons between adjacent bars in the same stack have much higher error than non-adjacent comparisons. We speculate that this is due to a bias towards making part-of-whole comparisons.

The next section summarizes related work on visual explanations for multivariate data analysis. This is followed by a description of the method we propose and discussion of metrics we use. Then Finally, we draw conclusions from this research and outline future work.

2 Related Work

A common strategy for visual exploration and analysis of multidimensional datasets is to apply dimensionality reduction techniques like multidimensional scaling, factor analysis and cluster analysis [2].

3 Methodology

Following the

splits that are more informative than a random split. We set up the following goodness-of-split criteria to guide our work:

- Simplicity:
- Support: An indicator of the strength of the relationship or visual pattern is the proportion of data points that
- Diversity: Robustness to overfitting?
- Degrees of Freedom:

3.1 Metrics

The non-parametric

3.2 Algorithm

We bootstrap

4 Evaluation

Data characteristics

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5 Extensions

Decision tree approach of guided EDA. Small multiples

6 Conclusion

The experiments in this paper explore variations of the bar charts originally studied by Cleveland & McGill and lead to insight into the sources of bar chart interpretation error. We found that short bars are more difficult to compare. Distractors have different effects in simple bar charts and stacked bar charts. The way bars are marked can influence accuracy. The introduction of a gap between stacked bars can prevent erroneous part-of-whole comparisons when desired. These results highlight the fact that small design changes can significantly affect how bar charts are perceived, and that even for simple visualizations, such as bar charts, we still do not have a complete understanding of what impacts chart perception.

Our experiments also raise new questions that will need to be addressed with additional studies. Future experiments will help understand the perceptual and mental strategies used in making bar height comparisons. Study designs that gather richer quantitative data, such mouse or eye movements, or more qualitative data, such as participant introspection on strategy, might provider deeper insight. Future directions might include exploring the effect of distractors in sorted bar charts, the impact of bar heights in constrained displays, and the effect of common interactions on bar charts, such as proportional brushing.

Predicting how people will perform on more complicated bar chart designs or how well people interpret bar charts "in the wild" remains difficult. However, we believe that concrete, experimentally-supported progress in understanding basic graphical perception effects is the most promising avenue towards improving visualization practice and towards a high-level theory of visualization.

Acknowledgments

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References

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