Paper Report

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Summary/Important Points from paper:

- **Survey of Evaluations:** The paper provides a comprehensive survey of 23 research papers that focus on user-centered evaluations of parallel coordinate (PC) techniques, including both standard 2D versions and its extensions.
- **Categorization:** The study categorizes these evaluations into four distinct areas based on how PCs are used:
  - Evaluating axis layouts.
  - Comparing clutter reduction methods - [Can use this for My Viz]
  - Showing practical applicability in new domains - [Need to understand how can this be done exactly if I want to add the Neural Network Application for My Viz]
  - Comparing Parallel Coordinates to other analysis techniques.
- **Performance Comparison:** The paper compiles a detailed view of 2D performance versus 26 techniques for 7 different tasks that are the main evaluation parameters.
- **Emphasis on User-Centered Evaluation:** The paper emphasizes the need for **user-centered evaluations** to determine the actual usability and effectiveness of PC and its variations, rather than relying solely on theoretical arguments.

How It Is Helpful to Me:

- **A few questions/points that arise**
  - Reduce cluttering transparency of edge/connecting lines.
  - "The reason for studying alternative axis layouts is mainly because the standard 2D parallel coordinates technique only allows the identification of relationships between adjacent axes." Does my viz do that? I think so because eventually My Viz looks like a parallel coordinate molded into circular axes.

- "The parallel coordinates technique is quite easy to learn and its immediate usability is good" - for My Viz i think it is not that easy and intuitive to read. It requires knowledge of what the sectors/colors/lines/rings represent. Possibly,, the polar form of it could be intuitive. Will check once implemented.
- Just like 3d has limitations of axes(variables), My Viz has limitation of number of labels.
- "The overall results of the study were positive with respect to the flexibility of the system and the possibility of interactively adding and removing axes." For My Viz-
  * proportional vs normal view
  * Zoomed in version of sectors vs normal version
  * radial vs polar view
  * collapsed rings (showing only last two) vs expanded view

  are some of the interactive elements which should help to gain inferences in better ways.

Conclusion:

- The paper enables me to think about certain aspects which needs to be updated in My Viz like adding transparency to the edges and certain things which can be implemented to validate my research like the quantitative and qualitative user tests to understand the readability and interpret-ability of the visualization.

Reference

Evaluation of Parallel Coordinates: Overview, Categorization and Guidelines for Future Research.