



TECHNOLOGY

TreeVersity: Visualizing Changes in Data Through Time With Dynamic Hierarchies

OVERVIEW

Background

Modern technology has provided a great increase in the amount and availability of information to analyze, making it easy for an user to become overwhelmed given a large dataset. Complex datasets may also have trends between two or more attributes that are not apparent when viewing the data in a traditional format like a table or graph. A tool that allows a user to view changes in data over time and allows the user to select which nodes to compare would provide a powerful way to analyze a dataset.

Innovative Technology

Researchers at the University of Maryland have developed TreeVersity, an interactive web based data visualization tool that allows users to analyze changes in datasets by creating dynamic hierarchies based on the data attributes. When analyzing datasets such as the federal budget or the number of students enrolled in a university it is common to look for changes over time. This task can be easier if the analysis is performed by grouping by attributes, such as viewing the federal budget by agency or viewing a student body by major or ethnicity. TreeVersity uses visualization techniques that allow users to explore absolute and relative changes, created and removed nodes, and each node's actual values, while maintaining the overall context of the data. Moreover, TreeVersity includes visualizations that show each node's change over time. Finally, TreeVersity provides a reporting tool that lists outliers in textual form, which can help users identify what has changed in the data without having to manually set up the filters. TreeVersity is flexible enough to be used in different domains to reveal useful insights for the data owners. A demonstration model is available at ter.ps/treevdemo (works best in Chrome).

APPLICATIONS

- Data visualization
- Interactive data verification and analysis

ADVANTAGES

- Allows users to visually compare changes in a dataset over time
- Can intuitively track the changes of multiple metrics
- Interface runs in a web browser, portable
- Useful for multiple types of datasets (budgets, death rates, student enrollment, etc.)

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

LICENSE STATUS

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CATEGORIES

- Information Technology

EXTERNAL RESOURCES

IS-2014-033