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The Design Space of Construction Tools for Information Visualization: A Survey[☆]

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Abstract

Information visualization has been widely used to convey information from data and assist communication. There are enormous needs of efficient visualization design for users from diverse fields to leverage the power of data. As a result, emerging construction tools for information visualization focus on providing solutions with different aspects including expressiveness, accessibility, and efficiency. In this paper, we review existing works on declarative specifications and user interfaces for visualization construction. By summarizing their methods for producing information visualizations and efforts on improving usability, we express the design patterns in terms of a design space which describes the tools in several different aspects. We discuss how the design space can be applied to support further exploration of potential research topics in the future.

Keywords: visualization construction tools, information visualization, design space, user interfaces, interaction, toolkits

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1. Introduction

In the past decade, the ability to capture data has been dramatically enhanced with the raising of the internet of things, intelligent industry, and sen-

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