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► **To cite this version:**

Bruno Pinaud, Pascale Kuntz. GVSR: an On-Line Guide for Choosing a Graph Visualization Software. U. Brandes and S. Cornelsen. 18th International Symposium on Graph Drawing, Sep 2010, Constance, Germany. Springer, 6502, pp.400-401, 2011, LNCS. <10.1007/978-3-642-18469-7_41>. <inria-00516580>

HAL Id: inria-00516580

<https://hal.inria.fr/inria-00516580>

Submitted on 10 Sep 2010

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GVSR: an On-Line Guide for Choosing a Graph Visualization Software

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Abstract. It is easy to find graph visualization applications for all sorts of uses. However, choosing an appropriate application may be difficult. This poster presents a website (<http://gvsr.polytech.univ-nantes.fr/>) built to help users to choose a program adapted to their problems. So far, this site references eighty programs and aims at helping users both in their choices and in comparing the programs. The site is also designed as a tool repository helping the community to access and compare the available tools, and benchmark new techniques and algorithms.

Keywords: Graph Visualization Software, On-Line Repository

1 Introduction

The profusion of available graph visualization applications may even confuse an expert in this field. Some programs have been developed in close partnership with the scientific community (Pajek, Cytoscape), others are purely commercial, or some are general graph manipulation and visualization software (Tulip). Generally speaking, the choice of a program well-adapted to both the data and the methodology is difficult. Some books can be used as guides [1,2], and several websites present lists of programs [3,4]. However, those websites plainly list the existing software, or make them accessible through snapshots. Consequently much effort is required to compare the various programs before choosing the best one for the problem considered.

Those observations led us to develop GVSR (<http://gvsr.polytech.univ-nantes.fr>). Its added value is to offer users query about existing software based on commonly used criteria such as scalability, implementation issues or type of uses. Our objectives are to facilitate the users' choices and to compare programs with common criteria. The website also presents the programs with a uniform text-based description. This site keeps evolving and so far contains eighty various software descriptions. In addition, the site allows users to propose new programs by simply completing an enclosed form. The site is also designed as a tool repository helping the user to access and compare the available Graph Visualization tools, and benchmark new techniques and algorithms. The whole community can benefit from the ability to reproduce published results, and from comprehensive comparisons with previous work. Thus, GVSR can be seen as a contribution to improving both the accessibility and quality of graph visualization tools.

2 How to use the site?

The site proposes four ways to find a software : 1) a tag cloud with the software names (the more a software page is accessed, the bigger its name is displayed); 2) the “Software List” link gives access to a simple alphabetical order list; 3) the “Advanced Search” link gives access to a search engine on the software database; 4) the “Start Browsing Now” button to start navigating in a taxonomy covering all the criteria used to described software, providing a structured exploration mode of the repository.

Each software description (Fig. 1) page is made of a screenshot, general information (e.g. website, . . .), specific information on the visualization, technical information (e.g. license(s), . . .) and references. At the bottom of the page, one can write a comment and score the software. After validation, these information will be added on the page.

The screenshot shows the GVSR (Graph Visualization Software Repository) website. At the top, there is a search bar and navigation links: Home, Browse Software, Software List, Advanced Search, Add Form, Login, Other Sites. The main content area is titled "TULIP" and features a small screenshot of the software interface. Below the screenshot, there is a "General software information" section with fields for Author, Website, and a description. The description states: "The mission of the Information Visualization Research Group is to develop and disseminate software tools for the visualization of large graphs. TULIP is a contribution to this mission. It allows the visualization, the filtering and the navigation of large graphs. At the core of the framework have been built to allow to visualize graphs having more than 1000-500 vertices. Such a visualization system must show and display large graphs, allow the navigation through generic operations as well as the extraction of subgraphs and the management of the results according to filtering." Other sections include "Specific software information" (Graph Type: 2D or 3D, Graph Size: 2D graph, 3D graph, more than 1 000 000 nodes, Type: DAG, tree) and "Description" (General graph manipulation and visualization software and a powerful C++ library). On the right side, there is a "Software characteristics" section with fields for Platform, Technical aspects, Software size, Development language, Operating system, and Main keywords. Below this is a "Comments" section with a text area and a "Score" field. At the bottom right, there is a "Submit Comment" button and a note: "NOTE: THERE IS NO SOFTWARE TO DOWNLOAD ON THIS SITE." The footer contains copyright information: "Graph Visualization Software Repository © 2009 - 2010 - 2011 - Last database update: September, 27th 2010."

Fig. 1. Example of a software description page.

3 Future Works

GVSR keeps evolving by a regular watch on the database, the addition of new programs and functionalities. We are working on an interactive visualization of the taxonomy as a graph. We also plan to directly host samples datasets to benchmark programs.

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