From Search to Discovery with Visual Exploration Tools

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ABSTRACT

In our goal to personalize the discovery of scientific information, we built systems using visual analytics principles for exploration of textual documents [1]. The concept was extended to explore information quality of user generated content [2]. Our interfaces build upon a cognitive model, where awareness is a key step of exploration [3].

In education-related circles, a frequent concern is that people increasingly need to know how to search, and that knowing how to search leads to finding information efficiently. The ever-growing information overabundance right at our fingertips needs a *natural skill* to develop and refine search queries to get better search results, or does it?

Exploratory search is an investigative behavior we adopt to build knowledge by iteratively selecting interesting features that lead to associations between representative items in the information space [4,5]. Formulating queries was proven more complicated for humans than recognizing information visually [6]. Visual analytics takes the form of an open ended dialog between the user and the underlying analytics algorithms operating on the data [7]. This talk describes studies on exploration and discovery with visual analytics interfaces that emphasize transparency and control features to trigger awareness. We will discuss the interface design and the studies of visual exploration behavior.

CCS Concepts/ACM Classifiers

H.5.2. [Information Interfaces and Presentation]: User Interfaces, Graphical user interfaces (GUI), Interaction styles (e.g., commands, menus, forms, direct manipulation), Evaluation/methodology;
H.3.3. [Information Storage and Retrieval]: Information Search and Retrieval, Information filtering, Search process

Author Keywords

Exploratory search, visual exploration, information foraging, sensemaking.

BIOGRAPHY

Eduardo is deputy division manager of the Knowledge Visualization group at Know-Center GmbH. He is also research fellow of the Interactive Systems and Data Science Lab, at Graz University of Technology and CONICET research fellow since 2015. His interests lie in the field of human computer interaction, in particular studying human aware computing and cognitive aspects of data exploration in visual analytics, virtual and augmented reality interfaces. Eduardo obtained his PhD in Computer Science in 2012 from Graz University of Technology, his Msc in Information Science and Technology from Osaka University, and holds a degree in Software Engineering from National University of Technology, Argentina.

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