

Supporting Reflection in Exploratory Search through Coordinated Visualisation

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Exploration and ideation using large digital collections can be difficult without the support of technology to help the user to extract the appropriate subset of documents that meet their evolving needs. Research has shown that this type of search requires collaboration between the user and the system, so that the technology may provide the required support for that user, informing them of connections of interest, while the user retains control through adjusting the system's perception of their interests to better reflect their actual interests. In order to make beneficial adjustments to the system's perception of their interests, the user must first understand their own information needs. Reflection is key in the understanding of information needs; however, due to the large volume of textual information consumed during the exploration, it is difficult to reflect on the path taken textually. Tools are required which render meaningful representations illustrating to the user how they have interacted with documents and concepts. This dissertation proposes a framework that generates scrutable and controllable user models to support reflection using coordinated visualisations. It examines the key features of scrutable user models and of visualisations which assist in the exploration and analysis of large data sets. The design and implementation of the framework are outlined. An evaluation of the developed framework and the observations made through the evaluation are described. This dissertation concludes that the coordinated visualisation representation of the user models generated are scrutable and controllable, and that the scrutable and controllable nature of the user models supports reflection. It observes, however, that the use of a different visualisation to illustrate the user model would enhance the benefits derived by engaging with the framework.