GUIDES 3.0

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SUMMARY

The Guides prototype demonstrates the use of narrative metaphor and anthropomorphic agents for browsing a multimedia database of early American history. The Guides are characters drawn from this period, and are explained through the use of video stories. In addition to delivering these stories, they make recommendations of database items to be browsed which are consistent with their interests. The System Guide, a contemporary figure, delivers both voice-over help information and browsing suggestions based on extrapolations of the user's interests. Options are also available for directed search and construction of guides which represent the user's own interests.

PREVIOUS WORK

This is the third phase of an ongoing project. The first prototype, which introduced the notion of characterized guidance, is discussed in [8]. A second version which introduced video storytelling is described in [7], and user testing results are reported in [4]. The design stance and process for the current implementation were analyzed in [6].

DATABASE

The multimedia database comprises information regarding the history of the United States from 1800 to 1850, with particular emphasis on the theme of Westward expansion. Text items were selected from Grolier's Encyclopedia Americana. Graphic items were transferred to videodisc from originals in the collection of the California State Library. Live video material was scripted and produced by the project team. There are a total of 589 items in the database.

USER INTERFACE

The salient feature of the current interface is the use of anthropomorphic representation of certain system functions and database content. We believe that this is appropriate when semiotic traits of the human representation can be clearly linked to actionable traits of the system [5]. In this prototype, recognizable stock characters (historical Guides) correspond to actionable traits of point of view story delivery and information preference. The system guide is presented as an architect of the system itself, and acts as a delivery mechanism for help information and proposes browsing actions based on the user's actions alone. Where anthropomorphic representation would interfere with instrumental activities, such as directed search, we provide a direct manipulation interface.

Guides' point of view material is presented in the form of stories. This, plus the serial presentation of individual data items, leads to a narrative interpretive of the information delivery [1]. A loose narrative is constructed by the interplay of user choices and guides' information preferences. We hypothesize that learning may be encouraged as users interpret the relationships of successive data items and guides' preferences.

MULTIMEDIA RETRIEVAL

Each multimedia data item was manually tagged with appropriate selections from a controlled term vocabulary of 182 terms designed by the editors of the Encyclopedia Americana. Any data item may have hypermedia links to any other, regardless of data type.

Boolean features representing manual thesaurus terms and links for each item were combined into a single vector following Fox [2]. This resulted in 589 vectors of dimension 771 representing the data space. This matrix was subjected to principal components analysis using singular value decomposition, in a manner similar to that described by Furnas [3]. This resulted in a reduced space of dimension 50. Guides' interests, directed search queries, and

browsing paths are all represented as vectors in this reduced space. Comparison with the vectors representing data items is with a cosine measurement [9].

HARDWARE
The system is implemented on an Apple Macintosh IIfx using HyperCard 2.0 augmented with a custom color animation driver. The animations, text data items, and the interface are stored on hard disk. Still image data items, guides' video segments, and system guide voiceovers are stored on a standard analog videodisc. Video from this disc is inserted into the Macintosh display image using a Mass Microsystems ColorSpace II/fx combination.

ACKNOWLEDGEMENTS

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