- [SASH93] Lisa J. Stifelman, Barry Arons, Chris Schmandt, and Eric A. Hulteen. "VoiceNotes: A Speech Interface for a Hand-Held Voice Notetaker."

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- [CNSD+92] Carolina Cruz-Neira, Daniel J. Sandin, Thomas A. DeFanti, Robert V. Kenyon, and John C. Hart. "The Cave: Audio Visual Experience Automatic Virtual Environment."

  summary This article describes the CAVE, a fully-immersive virtual reality interface. The CAVE is essentially a room whose walls, ceiling, and floor are surfaces on which images can be protected. This approach is in contrast to other interfaces such as CRTs or head-mounted displays. A description of VR interface attributes and issues is also given. The article is dominated by comparisons of four VR paradigms — CRTs, head-mounted displays (HMDs), binocular omni-oriented monitors (BOOMs), and the CAVE — based on a set of VR immersion and visualization issues.

  concepts VR issues for immersion: field of view, panorama, perspective, body representation, intrusion; VR issues for visualization: visual acuity, linearity, look around, progressive refinement, collaboration.

  place This work proposes a virtual reality environment which may be used as the interface paradigm for any system that I might develop. Given the existence of adequate technology, the CAVE may represent the ideal virtual reality interface, as it immerses the user *bodily* into the virtual environment.

  contribution The CAVE is presented as an interface without an application. My contribution would be an application that effectively uses the features of the CAVE or the other VR environments presented.

- [Eri93] Thomas Erickson. "Artificial Realities as Data Visualization Environments: Problems and Prospects."

  summary This article is a good exploration of the issues that arise from using artificial reality or virtual reality environments. Various ideas for the use of artificial realities, and the problems that may arise from using them, are explored.

  concepts Integration of databases and virtual reality, user interface issues in a virtual reality environment, assorted technical issues in virtual reality.

  place This paper serves as a good survey and summary of the issues surrounding artificial and virtual realities. Many of its concepts can be used as background information or starting points for new work.

  contribution My work can ultimately lead to virtual reality environments, and in fact is conceived with this in mind. This work might thus shed further light on the issues presented in Erickson's article.

- [Wex93] Alan Wexelblat. "The Reality of Cooperation: Virtual Reality and CSCW."

  summary This paper describes the potential of merging virtual reality environments and computer-supported cooperative work (CSCW). It presents examples of how virtual and artificial environments can be used to support and enhanced on-line cooperation and collaboration among colleagues.

concepts The "virtual meeting room," simultaneous and interactive display of group work in a single environment, remote communication among colleagues through the virtual environment.

place Though of no direct bearing to my work, the ideas presented here provide glimpses of the "bigger picture," an environment which brings together multiple users and groups to work within a single arena. In addition, this article also provides further ideas into the potential applications of virtual reality.

contribution My work does not provide direct contributions to the area of CSCW; however, the multimedia and database extensions provided in my work may provide further tools for a virtual CSCW environment.

- [Fai93] Kim Michael Fairchild. "Information Management Using Virtual Reality-Based Visualizations."

  summary This article presents ideas on using virtual reality to produce visualizations of otherwise conventional data. Elements such as the third dimension, traversal of a virtual world, etc., are introduced and their potential is described.

  concepts Three-dimensional visualizations of data, general model for displaying such data (in a virtual environment).

  place This article provides a good introduction to current work and ideas in bringing together virtual reality and information management. It serves as a starting point for the field in general, which is still very young.

  contribution My own ideas may contribute quite directly into this area, as I may bring virtual reality concepts into the database field in general. Thus, the concepts in this paper may be extended or explored more deeply by my work.

- [Kru93] Myron Krueger. "An Easy Entry Artificial Reality."

  summary Krueger's Videoplace environment is presented in this paper. This article is contrasts Krueger's mixed camera/computer approach with "conventional" virtual reality that uses helmets, goggles, gloves, or other artificial extensions.

  concepts Use of "unencumbered" artificial environments (i.e. human does not wear goggles, etc.), interfaces that make full use of both hands, use of desktop as human/computer interface.

  place Krueger's work provides an interesting alternative to the current trend in virtual environments and interfaces. Some of its ideas, particularly with the full use of the entire hand, pose significant advantages and great potential. Such ideas may be integrated with my work.

  contribution I do not see my work as taking the same approach as Krueger's Videoplace environment, and thus will probably not contribute to that area directly. However, if some of Krueger's ideas are utilized and integrated, then this may be viewed as a contribution to the overall field.

- [WAB93] Colin Ware, Kevin Arthur, Kellog S. Booth. "Fish Tank Virtual Reality."

summary This paper describes explorations into "fish tank" virtual reality, as opposed to immersive virtual reality. In fish tank VR, the user views the virtual world using a conventional monitor, instead of being "placed inside it" by using head-mounted displays. Users were asked to perform various 3D tasks using different modes of VR, and the authors found that contrary to conventional thinking, the immersive experience is not as important as the actual coordination of the virtual view with the user's head movements.

concepts Fish tank virtual reality, user testing methods and experiments.

place This work may be used by my research in two ways: one as a source of ideas for alternative user interface and interaction techniques, and two as a model for user testing and experimentation. The fish tank virtual reality interface, and its benefits as demonstrated by the authors, may be interesting if applied to database interfaces. In addition, the structured testing performed by the authors on users serves as a model for user testing in our own work.

contribution As with all user interface work, specific contributions from our field would be the application of innovative new user interfaces to the area of database design and querying.

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