

Chapter 55

Utilizing Augmented Reality in Library Information Search

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ABSTRACT

A cross-disciplinary academic team at Emporia State University is currently in the process of developing and utilizing a mobile-based augmented reality application in the context of library information search. Specifically, the team is researching the use of mobile applications that can generate multi-sensory information retrieval relative to archives and special collections. Using this application, student and faculty researchers can physically point their mobile devices at an archival object that has been specifically marked with a photo-generated “tag” and, using specially designed software, access videos, photos, music, text, and other data that is germane to the object. This allows the archivist to preserve the object behind protective glass or other physical barriers, while allowing the information seeker to learn more about the object using embedded multimedia. This minimizes the potential for damage while providing extra dimensions of information. Of the many virtualizations currently under development are videos related to a rare novel and music compositions relative to rare sheet music – both currently housed within Special Collections at Emporia State University.

INTRODUCTION

Information search has an interesting history – especially as it relates to libraries and user interactions when engaging with information and data retrieval systems. Aside from advances in the mechanics of information search and retrieval, several scholars have researched the evolving psychology of how users engage in information seeking strategies within libraries and media centers. Notable researchers in this field include Carol

Kuhlthau who crafted the *Information Search Process* (ISP) model (2001); Brenda Dervin whose *Sense Making Strategies* are still widely used in information retrieval (1976); Marcia Bates who introduced *Browsing and Berry Picking Techniques* related to information search behaviors among library patrons (2005); *The Big Six Information Literacy Process* designed for school library media specialists by Michael Eisenberg and Bob Berkowitz; and Nick Belkin whose *Anomalous States of Knowledge*, also known as the ASK

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model, provided the construct for many contemporary search engines, including “ASK Jeeves” (1980). Emerging systems such as faceted search, voice-assisted information retrieval, QR Codes, and semantic-based search engines, including Wolfram Alpha, Hakia, Swoogle, Powerset and other similar systems promise enormous potential for retrieving information from the corpus (Radhakrishnan, 2009).

The two primary taxonomies related to information seeking strategies are known as *Information Science* and *Information Retrieval*. Information Science is a field of study that is primarily concerned with the analysis, collection, classification, manipulation, storage, retrieval, movement, and dissemination of information. In short, this is the field of study most closely approximating traditional library science. Information Retrieval, on the other hand, is involved with obtaining information resources relevant to an information need and related to a collection or body of resources. This field of study most closely approximates *Human-Computer Information Retrieval* (HCIR) and human-factors psychology. For many years, these fields of study were considered completely independent of one another. Librarians were exposed to principals of Information Science in their graduate programs, whereas computer scientists were focused on the Information Retrieval systems and how information seekers extracted data through various interfaces and human-computer interaction systems.

However, these two fields of research and inquiry are beginning to converge. Increasingly, the field of *Information Science* is intersecting with the field of *Information Retrieval*. For example, the dissemination of information is often managed through an information retrieval system – usually a computer or mobile application of some sort. We see these systems each time we enter a library and ask personnel at the Reference Desk for search assistance. However, the majority of these systems (OCLC, WorldCat, LexisNexis, Academic Search Complete, etc.) remain primarily

text-based. Queries must still be manually keyed using the correct syntax in order to retrieve a data set that is relative to the query.

What are beginning to emerge in libraries are new modes of information retrieval that do not necessarily require keyboard entry. For example, voice-assisted search, QR-coded information retrieval, and other forms of inquiry are beginning to take root. These systems allow the library staff to embed additional data stores into the various library artifacts and corpus. While still far from providing patrons unlimited search opportunities within the library, they do provide a glimpse into how librarians will likely codify, classify, and store information in the very near future. The promise of these types of systems is that a variety of information modalities can be retrieved and presented to the information seeker relative to the search query – well beyond text. For example, images, videos, music, or any other type of information can be embedded into the corpus and retrieved along with the query. Groundbreaking work in this area by Gary Marchionini at the University of North Carolina has generated research related to human-information systems, interface design, digital libraries, and interaction design (OCLC, 2012). In 1998, Marchionini and researchers from the Interaction Design Laboratory and the School of Information and Library Science at North Carolina developed a ground-breaking retrieval system entitled the *Open Video Project* based on metadata that allows information seekers to locate video-based archives. According to the project Web site, “the purpose of the Open Video Project is to collect and make available a repository of digitized video content for the digital video, multimedia retrieval, digital library, and other research communities.” (p. 1) However, the system may have been developed a bit too early to leverage contemporary mobile-based information retrieval technology. Clearly, the direction libraries are moving is toward systems that allow patrons to transport and utilize information search systems anywhere within the library ecosystem.

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