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CONCURRENT SESSION:

“The Planning and User Needs for Applied Mobile Digital Library Research”
The planning and user needs for applied mobile digital library research

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Introduction

• A project at the University of Illinois plans applied research to study *how best to design, deliver, and assess a collection based wayfinding (localization and path suggestion) software application for mobile devices.*
Introduction

• The planning team is a multidisciplinary collaboration among the University Library, the Department of Computer Science, and the Graduate School of Library and Information Science.
Introduction

• University of Illinois Library System
  – Departmental structure is decentralized
    • Over thirty departmental libraries
  – Collection Size
    • Nearly 12 million items; largest public research university in the United States
Needs of New Undergraduate Students

• locating items in the physical space (books, DVDs, periodicals)
• locating numerous library service points
• previous assessments indicate library does not meet user needs in providing easy to use access tools that allow users to find things on their own.
Undergraduate Library Space

• library is two floors and built below ground to preserve the prairie like environment of central Illinois

• circulating collection is on the lower level; does not have a public service point

• students commonly ask at the service desks, “Where are your books?”
Catalog User Tasks: Obtaining Items

- Catalog software assigns conceptual locations to books. Our catalog does not assign physical building coordinates.
The Vision

• Development of library wayfinding software for mobile devices would enable a student to enter the call number of a book into their iPhone and the device will provide real-time directions to the location of the book in the library.
Technology

• Accomplishing the vision relies on Wi-Fi fingerprinting.
• Augmenting the data we have in the catalog with physical building locations.
• Creating a database of call number ranges to associate Wi-Fi signal readings with shelf location.
Wi-Fi fingerprinting

• Is a technology for determining the position of a device in a building, even when GPS-based localization is unavailable.
Wi-Fi Fingerprinting

• It is possible to characterize every location in a building using a set of values that depends on the strength of the signal received from each access point [1,2].
The overall system

• There are three databases involved in the correct behavior of the overall system, these include 1) the Wi-Fi signal reading database per each physical location in a building; 2) the call number range database; 3) the online public access catalog (indicating item availability).
Assessment

• Detailed observational analysis of wayfinding activities of small groups of students consenting to be observed.
Assessment

• Researchers want to understand to what extent this wayfinding application helps students locate items and what impact this has on student willingness to explore other library collections and service points.
Assessment

• Researchers will record and communicate a rigorous evaluation of way finding software design, delivery, and effectiveness for helping students obtain desired items and becoming aware of physical collections while exploring the extent of student engagement with the collection in the physical library space.
Software code

• Software to be open source and available for libraries or museums to adapt to their institutions.
  – Interested in becoming a member of the software development community?
    • Email: jimhahn@illinois.edu
Cited


Previous wayfinding studies


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