Fall 2011 Capstone Poster Session
Friday, December 2nd, 2011
2pm-4pm
1616 Guadalupe Street, 1st floor
CookDrop Inc. is a startup application development company formed to produce modern recipe management interfaces that recognize and address the real-world information problems of home recipe users. This capstone project was initiated to provide a foundation of methodical design research to inform the creation of these applications. I conducted extensive user interviews with a diverse group of ordinary recipe users, transcribing and analyzing these ethnographies to generate raw design insights. I also performed a competitive analysis of existing recipe applications, identifying their features, innovations, strengths and weaknesses. This combination of user research and competitive analysis served as the primary input for a design synthesis process. Methods used include the development of a master interaction diagram, temporal and semantic zoom exercises, process diagramming, and semantic context reframing. The research concludes with a thorough process of insight combination to generate actionable design recommendations for CookDrop. All of the processes and artifacts of this project are organized in a versatile HTML5 framework. This framework acts as both the deliverable format for the research and as a visual asset for presentations.

The UT Libraries has millions of items available for circulation. Currently the only option for users to check out items is to take them to a service desk. Budget constraints are making it more difficult to staff service desks with the same level of staff and for the same amount of hours. To address these issues, the UT Libraries is considering implementing a self-checkout service. I will investigate the feasibility of implementing a self-checkout system for the UT Libraries which will include investigating current (RFID) systems, identifying a pilot site (branch), outlining the physical processes necessary as well as a plan for publicity and training. The result of my capstone will be a proposal for which self-checkout system to purchase and an outline of how implementation should be undertaken.
Today, a social media presence has become a popular and almost expected means of professionally exhibiting skills, services, content, and information. Whether you represent a startup company, a library, or a large organization, social media is a way of establishing yourself to a wider audience and connecting with both general and specific communities. However, when you are just a new face in the social media crowd, how do you find your audience and show them the valuable content you can provide? Trapit is a web tool/site that "learns your interests to bring you a continually improving stream of personalized content." Under the supervision of Trapit, I built community pages on Facebook and Twitter based on multiple subjects and curated articles for these pages (aggregated by Trapit). I then identified variables for increasing community interaction and participation, and tested those variables within the communities. Some strategies included when to post content, how to post content, and how to identify the interests of your community. The results from these tests culminated in the development of a social media strategy of best practices.
Ana Cox

**Cataloging Austin’s Live Music at 90.5 KUT**

KUT

Faculty Supervisor: Karen Pavelka
Field Supervisors: David Brown and Melinda Chow

Since 1958, KUT has provided central Texas with award winning news, music and personal experience stories at 90.5FM and globally at www.kut.org with a mission of “becoming the most trusted source for news, information and the Austin, Texas, music experience.” (www.kut.org) In support of this mission, KUT has amassed over 3,000 original recordings of live music on a variety of audio formats. Over the years these items have received sporadic documentation and digitization, and were stored in various physical locations making retrieval of past recordings incredibly difficult and time consuming for a busy production staff. For my capstone experience project I created a complete inventory of these materials using MS Excel in association with a grant from the Corporation for Public Broadcasting Content Inventory Project. I developed a controlled vocabulary using PBCore metadata standards and recommended best practices for future cataloging and storage. I also organized all physical materials in a central climate controlled reference library.

Anthony Domina

**Cost and Feasibility Study of Current EMR Systems**

AOMA Graduate School of Integrative Medicine

Faculty Supervisor: Glynn Harmon
Field Supervisor: Lesley Hamilton

The AOMA Graduate School of Integrative Medicine in Austin serves as an acupuncture clinic and school. Presently, AOMA’s methods of recordkeeping are strictly paper-based. The hundreds of manila folders lining their office walls not only create a tedious environment for data storage, but they also fall prey to the hazards that come with keeping paper records, such as susceptibility to fire, theft, and unintentional misplacement of critical files. These factors alone were enough for AOMA to begin their search for an EMR, regardless of the government mandate that requires all health practices to obtain an EMR by 2014. This much needed search for an EMR made available my capstone opportunity. My task was to see what type of EMR systems were currently available, and then narrow it down to a select few that would most accurately match the desired criteria set forward by AOMA. Of great importance were cost and feasibility. My research targeted any costs that would come from installation, training, and maintenance of any EMR. I also focused on whether an EMR was capable of handling insurance, scheduling, reporting, and whether or not it had the Meaningful Use capabilities to allow AOMA to communicate with its three affiliates.
Steven Fazzio  
*Predicting User Behavior During Mobile Application Use*

Faculty Supervisor: Randolph Bias  
Field Supervisor: Joel Lang

My project explored user behavior in mobile applications, specifically focusing on differences between users in different demographic groups. These differences were explored using a concept known as the Customer Lifetime Value (CLV). The CLV of a user is the amount of profit that a user generates during the time they are using a specific app. This profit is generally created through some combination of the cost of the app, in-app advertising, and in-app purchases. In my project, I attempted to create a model of the CLV of mobile apps. I based my model on data gathered from various sources including corporate white papers, scholarly articles, and publicly available market data. Due to the scarcity of nonproprietary market data, I decided to generate my own data on mobile advertising. To this end, I set up advertising campaigns on the Jumptap advertising network, using advertisements which I found on the Offermobi affiliate network. I compared the effectiveness of different ads with regard to demographic information (mainly language and geographic location), as well as with regard to platform and wireless carrier.

Antonia Dixon Frydman  
*The Paul DeMain Collection: Loud Hawk vs. the United States of America*

Sequoyah National Research Center (SNRC)  
Faculty Supervisor: Patricia Galloway  
Field Supervisor: Daniel Littlefield

Housed within the Sequoyah National Research Center (SNRC) on the campus of UAR at Little Rock, the American Native Press Archives (ANPA) is one of the world’s largest repositories for Native newspapers, as well as for periodicals, manuscript and special collections related to Native politics, history, art, and literature. One prominent ANPA donor is Paul DeMain: newspaperman, CEO of Indian Country Communications, Inc., and managing editor of *News from Indian Country*. Working with Dr. Littlefield, I processed, preserved, and described the Loud Hawk series within the Paul DeMain Collection. The Loud Hawk series contains court documents, newspaper articles, photographs, research notes, and letters relating to the criminal convictions of six members of the American Indian Movement, including Dennis Banks, Anna Mae Aquash, and Leonard Peltier. This comprehensive series, originally accumulated by Banks’s attorney Kenneth Stern, documents the US vs. Loud Hawk case from its initiation in Portland, Oregon in 1975, to its resolution in 1988 after 13 years of pre-trial litigation. Materials within the series provide evidence of governmental abuse of the legal system, anti-Indian bias, and FBI misconduct. My work culminated in the creation of a finding aid for the Loud Hawk series, as well as in the completion of a finding aid for the Paul DeMain Collection.
Catherine Grady
Crowdsourcing Relevance for Information Retrieval
Master’s Report
Faculty Supervisor: Matt Lease
Second Reader: Randolph Bias

Successful information retrieval relies on an adequately defined notion of relevance. Information scientists such as Schamber and Saracevic have argued that defining relevance as mere topicality necessarily limits the type of results an information retrieval system can produce. Their recommendations – for example, enlarging the scope of relevance to include more situational and contextual information – have been partially heeded by the creators of modern-day search engines (e.g. new advances in search such as sensitivity to geographic location). However, modern IR is still overwhelmingly dominated by topical relevance: one can contrast the ideas of Saracevic et al. with the methodology used in TREC evaluation, a methodology that lends itself very naturally to straightforward topicality. With the advent of crowdsourcing, however, we now have an infinitely flexible and intelligent computing resource: human beings. The addition of humans in the otherwise automated IR loop means that we may be able to explore new dimensions of relevance. With this in mind, how exactly should crowdworkers be used in relevance assessment? Using models of relevance taken from information science scholarship, I examine the current crowdsourcing literature focused on relevance assessment to see what "kinds" of relevance are being addressed, as well as what directions crowdsourced relevance research has yet to go. Ultimately, I hope to come up with a set of recommendations on how to harness the humanness of human computation to open up traditional search to new relevances.

Russell Hale
Decision Support for Collection Development: A Do-It-Yourself Data Analysis Tool for Front-line Staff at Faulk Central Library
Faulk Central Library
Faculty Supervisor: Randolph Bias
Field Supervisor: Andrea Schwartz

The project aims to develop a decision support tool that will help library staff optimize new-material selection for the travel books collection at Faulk Central Library. Travel-related materials represent slightly more than one percent of the 500,000-item circulating collection housed at the library. Faulk annually spends thousands of dollars to augment and update the travel collection. Front-line staff exercise broad discretion when selecting new materials for purchase by the library. But these staffers currently choose which titles to buy without ready access to collection-level data and summary statistics from the library’s integrated catalog and circulation software system. The project seeks to create a stand-alone tool easily used by non-technical staff that will analyze and manipulate data recently extracted from the library’s systems. Users of the tool will click a series of buttons to make on-the-fly selections that display summary statistics and data analysis from all or any segment of the collection chosen by the user. A further series of clicks on +/- buttons will allow a user to drill down into the analysis and view item-level catalog and circulation details. The decision support tools and catalog data will reside in a single Microsoft Excel file.
Susie Herbstritt
Grading Heuristics: A Web-based Tool for Evaluating Handheld Touch Devices
projekt202
Faculty Supervisor: Randolph Bias
Field Supervisor: Alice Clark

Heuristic evaluation is a well-documented discount usability method which can be used to quickly identify issues with a product’s user interface design. Using an expanded set of heuristics developed by the design research team at projekt202 that is aimed specifically at handheld and touch-based devices, this study aims to research, design, and develop a flexible, web-based interface to record results of heuristic evaluations across a range of verticals and devices. By providing a standardized and efficient framework, a new toolkit for recording heuristic evaluation “scores” helps in reducing both subjectivity of the results as well as time needed for completion of the evaluation. Additionally, this application can also be used as a basis for creating a competitive analysis of similar products. Through user research methodologies such as stakeholder interviews, rapid prototyping and user testing, I sought to understand the team’s needs and evaluate the most appropriate platform for building the tool. Using the RITE (Rapid Iterative Testing & Evaluation) testing method, I combined the iterative development process with one round of user testing to focus on the creation of a user-centered design. The iterative process was documented through site blueprints, wireframes, and both low- and high-fidelity prototypes using tools such as Omnigraffle and Adobe Acrobat. Finally, I created a prototype of a dynamic web app using HTML and PHP. The result is a framework for a flexible, standardized tool which serves as a guide for team members who are not as familiar with evaluation criteria as well as a repository for previous product evaluations to use a reference.

Daniel Hill
Gathering Requirements for an IC^2 Digital Repository
IC^2 Institute
Faculty Supervisor: Randolph Bias
Field Supervisor: Prentiss Riddle

IC^2’s Bureau of Business Research (BBR) is currently planning the creation of an online repository in order to share their published articles, working papers, and books with a wider audience. The materials in the BBR collections were created over several decades and represent a diverse set of research interests, industries, and trends in both local and global economies. The multifarious nature of these holdings could draw an equally broad audience base, but posed challenges in terms of resource classification and subsequent retrieval. I worked with Prentiss Riddle, a senior business analyst at IC^2, to begin defining functional requirements for a classification scheme and usable interface for the repository. Specifically, we required a classification structure and process that future volunteers could easily learn and execute. The end result of this process also had to support findability for the end user. We evaluated previous in-house classification methods, methods from other business research holdings, and performed a content analysis on the materials to inform the design of a scheme and workflow. User tests were performed to validate the reliability of classification work, as well as end user ability to find resources using a proposed search interface.
Karen Kremer  
*Increasing the Visibility and Usability of the Fontaine Archive*  
Fontaine Archive  
Faculty Supervisor: Randolph Bias  
Field Supervisor: Claudia Chidester

The Fontaine Archive began in 1999 to house the papers and artwork of Paul and Virginia Fontaine spanning from 1935 to 1996. It includes, among other things, 314 photographs, 350 pieces of artwork, 13.5 linear feet of books and manuscripts, and 6 linear feet of letters and documents related to the Fontaines’ life as artists in Germany and Mexico. The bulk of the documentation covers the years from 1935 to 1965, during the height of modernism, and includes key figures from dancer Mary Wigman to artist Willi Baumeister. Those who may be interested in the collection include art historians interested in American artists living abroad, as well as the role that the arts, including dance and music, played in postwar Europe’s rebuilding. Director of the Archive and daughter of Paul Fontaine Claudia Chidester has created a website and Facebook page for the archive, but was not satisfied with the number of visitors they received. For my capstone project, I aimed to increase the visibility of the Archive online. Over the course of the semester, and with Claudia’s help, I launched a Facebook marketing campaign, conducted a usability study on the website, and compiled an extensive database of artists, museum curators, archivists, gallery owners, writers, and scholars that we could contact regarding the Archive.

Michael McCombs  
*Sharing Our Stories, Shaping Our Future: Capturing Our Stories Oral History Initiative, MLIS Education, and GLIFOS Rich Media Content*  
Capturing Our Stories Oral History Initiative  
Faculty Supervisor: Loriene Roy  
Field Supervisor: Arro Smith

This capstone project contributed an original oral history interview, research paper, and geographic content to the Capturing Our Stories national oral history initiative, which collects and preserves the life histories of retiring and retired librarians. The interview of Professor Emeritus Billie Grace Herring uncovered affective and cultural information relating to the history of cataloging, library science education, administration, and vocational mobility, especially between the late 1960s and early 1990s. The research paper, written for submission to a library science journal, explores ways professors can integrate the Capturing Our Stories project into introductory and research methods courses in library and information studies programs. Participation in Capturing Our Stories, through oral history collection and preservation, allows students to learn about opportunities in the library profession while broadening the historical record of librarianship through active service learning. In addition, students gain a firm grasp of oral history and ethnographic methodologies, historical editing, and digital archiving and preservation skills through manipulating GLIFOS rich media content. The project also enhanced the existing corpus of Stories interviews by adding geographic information via synchronizing locations mentioned within the interviews with Google Maps and GLIFOS.
Holly Mendenhall  
*Mapping Metadata Schemas for Large Collections of Data*  
Texas Advanced Computing Center  
Faculty Supervisor: Patricia Galloway  
Field Supervisor: Maria Esteva

Texas Advanced Computing Center (TACC) provides powerful computational resources to university researchers from diverse disciplines. From archaeologists to astronomers to photographers and physicists, their collaborators produce countless digital objects in myriad formats. Data curators at TACC hope to develop a data management system that will locate, store and protect these assets for future use. The current infrastructure does not record changes made to data at every provenance event, which creates difficulty in establishing authenticity and tracking usage. The purpose of this project was to examine the existing collection catalog and make recommendations for improvement. To this end, I conducted research to determine which metadata standards are employed by similar institutions as well as lifecycle events tracked. I updated the collection catalog with revisions made to the Data Documentation Initiative (DDI) specification, mapped external schemas (Core Scientific Metadata Model, Dublin Core Science, DDI Controlled Vocabularies) and reorganized the structure according to event. I produced a literature review that data curators at TACC can reference to assess current best practice within the field of data management in regard to scientific data. By creating a “crosswalk” that merges discipline-specific metadata into a single catalog, I hope TACC will take further steps toward the preservation and open access of invaluable digital content at every lifecycle stage.

Bhavna Verma  
*Quality of Experience in Mobile Phones*  
AT&T Research Labs  
Faculty Supervisor: Randolph Bias  
Field Supervisor: Kurt Joseph

Due to the widely changing face of the mobile phone technology, it has become a challenge for mobile service providers such as AT&T to predict the success and acceptance of a new phone among its customers. The goal of the Human factors team at AT&T is to identify usability factors that affect user experience beyond quality of service for a mobile phone user. The team has an existing usability test program that measures factors like efficiency, effectiveness, and error rate of a mobile phone. There was a need to enhance their test program with other important factors that affect user satisfaction over long term. I worked with various professionals to gather information on different metrics and established methods to measure those. The result of my research was a list of mobile phone factors that affect customer’s perceived quality of experience and quality of service and methods to evaluate their efficiency. To identify these features and evaluating methods, I performed literature review, read online blogs and collaborated with various teams at AT&T. The new list includes features such as security, reliability, and long run user experience like things and the method proposed ensures these features are tested in a short time and gives accurate results.