

Designing the Search Experience

Half-day Tutorial

Keywords

Search, navigation, information retrieval, information discovery, data visualization, user experience, user-centred design

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Biography

Tony Russell-Rose is founder and director of UXLabs, a user experience research and design consultancy specializing in complex search and information access applications. Before founding UXLabs he was Manager of User Experience at Endeca and editor of the Endeca UI Design Pattern Library, a resource dedicated to best practice in the design of search and discovery experiences. Prior to this he was technical lead at Reuters, specializing in advanced user interfaces for information access and search. And before Reuters he was Group Manager at Canon Research Centre Europe, where he led a team developing next generation information access products and services. Earlier professional experience includes a Royal Academy of Engineering fellowship at HP Labs and a Short-term Research Fellowship at BT Labs.

His academic qualifications include a PhD in human-computer interaction, an MSc in cognitive psychology and a first degree in engineering, majoring in human factors. He also holds the position of Honorary Visiting Fellow at the Centre for Interactive Systems Research, City University, London. He is currently vice-chair of the BCS Information Retrieval group and chair of the IEHF Human-Computer Interaction group.

EXTENDED ABSTRACT

Course Objectives

The aim of this tutorial is to deliver a learning experience grounded in good scholarship, integrating the latest research findings with insights derived from the practical experience of designing and optimizing an extensive range of commercial search applications. It focuses on the development of transferable, practical skills that can be learnt and practiced within a half-day session.

Participants in this tutorial will:

- Explore the fundamental concepts and principles of Human-Centred Design for information search and discovery
- Study models of human information-seeking behavior (e.g. Bates, Belkin, Jarvelin & Ingwersen, Marchionini, Norman, Sutcliffe & Ennis, etc.), and how to apply interaction design principles based on those models
- Learn how to differentiate between various types of search behaviour: known-item, exploratory, lookup, learning, investigation, etc. and understand how they may be combined to form composite search strategies and patterns
- Develop an understanding of the key dimensions of user type, goal and mode of interaction, and how to apply these dimensions when designing for different user contexts
- Understand the role of design patterns, and how to apply UI design principles and patterns from various libraries in designing search user interfaces
- Gain an awareness of the key design resources available within the HCIR community and how to apply these to practical design challenges

Tutorial History

This tutorial was successfully presented at HCI 2009 in Cambridge, UK, ECIR 2010, ECIR 2011 and ECIR 2012. On three of those four occasions the tutorial was oversubscribed, with a waiting list for unsuccessful applicants.

The current proposal represents a completely revised version of this tutorial, updated to accommodate new concepts and exercises drawn from the forthcoming book *"Designing the Search Experience: the Information Architecture of Discovery"*, to be published by Morgan Kaufmann in 2012.

Audience

This tutorial is aimed at IR researchers and practitioners, information architects and search specialists interested in the designing more effective

user experiences for information retrieval and discovery. An awareness of basic HCI principles or previous experience of designing user interfaces is useful (but not essential).

Relevance to the IR Community

The fields of human computer interaction and information retrieval have both developed innovative techniques to address the challenge of navigating complex information spaces, but their insights have to date often failed to cross disciplinary borders. This tutorial is both timely and relevant in that it acknowledges and builds on the momentum of recent collaborations such as the HCIR (Human-Computer Information Retrieval) conference series and IIX more broadly to deliver a concise and practical guide to User Experience Design for information search, access and discovery.

Tutorial Content

The course comprises the following sections:

1. **Introductions and objectives:** Group introductions & ice-breaker. A brief summary of what each participant hopes to gain from the session, and what experiences they bring.
2. **Understanding Search & Discovery Behaviour:** An overview of the key theories and models of human-information seeking behaviour, focusing on the work of Bates, Belkin, Jarvelin & Ingwersen, Marchionini, etc. and their relationship to more practitioner-oriented material, e.g. Morville, Tunkelang, White etc.
3. **Varied Solutions for Varied Contexts:** An exploration of the universal dimensions that define information-seeking behaviour and its context, and how these translate into principles for the design of search and discovery experiences.
4. **Faceted Navigation & Search:** A review of Rangathan's seminal work on Colon Classification and its roots in Aristotelian teaching, and an exploration the implications for the design of contemporary faceted classification and search paradigms.
5. **UI Design Pattern Libraries:** A detailed examination of best practices in search experience design, embodied as design patterns in key HCIR design pattern libraries. An exploration of the role of patterns in user experience design and comparative analysis of pattern libraries in general.
6. **Group Exercise: UX Review:** An opportunity to apply the above principles in a practical group exercise. We will review the relevant theories and models of human-information seeking behaviour and the

key principles for the design of search and discovery experiences. We will complement these with a practical review of best practices in user-centred design, embodied as design patterns in key HCIR design pattern libraries, and apply these to a real-world scenario. The scenario will involve critical review of a live site, with analysis and review of the search and discovery experience, and synthesis of appropriate design insight, solutions and recommendations.

7. **Group Exercise: UX Review (Feedback & Presentations):** Feedback and review of the group exercise. Participants will present on behalf of their groups, describing the issues they identified along with their analysis and proposed design solutions and recommendations. Review of feedback from the group as a whole.
8. **Conclusions & Wrap-up:** A review of the overall session, including the shared experiences of the group exercises and the contrasting findings of each. A summary of the follow-on resources and takeaways from the course and the wider HCIR community.

Key References

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10. Max L. Wilson, Bill Kules, m.c. schraefel and Ben Shneiderman. "From Keyword Search to Exploration: Designing Future Search Interfaces for the Web", *Foundations and Trends® in Web Science*: Vol. 2: No 1, pp 1-97, 2010.

Tutorial Structure

This half-day tutorial is structured as follows:

00:00	Introductions and objectives
00:10	Understanding Search & Discovery Behaviour
00:30	Varied Solutions for Varied Contexts
01:00	Faceted Navigation & Search
01:15	UI Design Pattern Libraries
01:30	BREAK
02:00	Group Exercise: UX Review
03:00	Group Exercise: UX Review (Feedback & Presentations)
03:20	Conclusions & Wrap-up
03:30	CLOSE

Course Materials

Attendees will be supplied with a full set of tutorial notes (presented as PowerPoint slides plus annotations). In addition, they will also receive a complete set of materials for the practical exercise: a set of generic and IR-specific expert review guidelines, a set of sample information discovery applications, and tutorial worksheets.