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Gobinda Chowdhury · Julie McLeod  
Val Gillet · Peter Willett (Eds.)


# Transforming Digital Worlds


13th International Conference, iConference 2018  
Sheffield, UK, March 25–28, 2018  
Proceedings

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Newcastle upon Tyne  
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## Preface

Established in 2005, the iConference is an annual gathering of a broad spectrum of scholars, researchers, and practitioners from around the world who share a common concern about critical information issues in contemporary society. The iConference pushes the boundaries of information studies, explores core concepts and ideas, and creates new technological and conceptual configurations—all situated in interdisciplinary discourses. iConference 2018, the 13th annual iConference, co-hosted by the Information Schools at the University of Sheffield and Northumbria University in Newcastle, took place in Sheffield during March 25–28, 2018. The theme of this first-ever UK-based iConference was “Transforming Digital Worlds,” and the aim was to bring together thinkers and leaders from academia, industry and not-for-profit organizations to discuss emerging challenges and potential solutions for information and data management in today’s rapidly changing world. Given the theme and the mission of the iSchools, which is to connect people with information using technologies, the conference keynotes addressed three areas, viz, information, people, and technologies. The keynote speakers were three world-renowned researchers – Dr. Lynn Silipigni Connaway from OCLC Research, Dr. Susan Dumais from the Microsoft Research Lab, and Professor Luciano Floridi from the Oxford Internet Institute.

iConference 2018 attracted a total of 139 completed papers, 80 preliminary papers, and 91 posters. Two track chairs were chosen for each area of submission, i.e., completed papers, preliminary papers, and posters. A total of 391 recognized experts from around the world took part in the review process. Each paper was reviewed by three reviewers and each poster by two reviewers, both through a double-blind review process. Finally, 42 completed papers, 40 preliminary papers, and 69 posters were selected for the conference. The quality of the accepted papers was ensured by the high level of competition and rigorous review process resulting in acceptance rates of 30% for completed papers and 50% for preliminary papers. Our grateful thanks to our reviewers and, in particular, to Noa Aharony, Kendra Albright, and Mei Mei Wu, who oversaw the reviewing of all the completed and preliminary papers.

This is the first time in the history of the iConference that the proceedings are being published by Springer in their *Lecture Notes in Computer Science* (LNCS) series. These proceedings comprise abstracts of the keynotes and the full version of the completed and preliminary papers presented at the conference. These papers have been grouped under eight broad themes: social media, communication studies and online communities, mobile information and cloud computing, data science/mining and data analytics, information retrieval, information behavior and digital literacy, digital curation, and information education and libraries. Although these categories or themes are not strictly mutually exclusive, we believe they will give the readers an idea of the different research areas and topics covered in the iConference series. Posters are not included in the proceedings, but they are available through the IDEALS open access repository (<https://www.ideals.illinois.edu/handle/2142/14872>).

We hope that together the three keynote addresses and 82 papers presented in the proceedings will stimulate interesting discussions and debates surrounding the issues of information and data in today's digital worlds.

March 2018

Gobinda Chowdhury  
Julie McLeod  
Val Gillet  
Peter Willett

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# **Keynotes**

# **People's Modes of Online Engagement: The Many Faces of Digital Visitors and Residents**

Lynn Silipigni Connaway

OCLC Research, 6565 Kilgour Place, Dublin, OH 43017-3395, USA  
lynn\_connaway@oclc.org

**Abstract.** This keynote will discuss the findings of research on how individuals engage with technology and get their information. The research has been published in an OCLC report, *The Many Faces of Digital Visitors & Residents: Facets of Online Engagement*, and was conducted in Hong Kong, Italy, Spain, the UK, and the US. The results of the research provide insights for teaching and learning as well as the development of programs, services, and events in libraries and information centers.

# Large-Scale Behavioral Analysis: Potential and Pitfalls

Susan T. Dumais

Microsoft Research Lab, One Microsoft Way, Redmond, WA 98052-6399, USA  
sdumais@microsoft.com

**Abstract.** Over the last decade, the rise of web services has made it possible to observe human behavior in situ at a scale and fidelity previously unimaginable. These large-scale behavioral traces enable researchers to understand how information diffuses through social networks, examine individual learning strategies influence to educational outcome, identify possible adverse drug reactions and interactions, etc. Using examples from web search, I will highlight how observational logs provide a rich new lens onto the diversity of searchers, tasks, and interactivity that characterize today's information systems, and how experimental logs have revolutionized the way in which web-based systems are designed and evaluated. Although logs provide a great deal of information about what people are doing, they provide little insight about why they are doing so or whether they are satisfied. Complementary methods from field observations, laboratory studies, and panels are necessary to provide a more complete understanding of search behavior and to enable the development of new search capabilities.

# What Human Project Should Be Pursued by a Mature Information Society?

Luciano Floridi<sup>1,2</sup>

<sup>1</sup> Oxford Internet Institute, University of Oxford,  
1 St Giles, Oxford, OX1 3JS, UK

<sup>2</sup> The Alan Turing Institute, 96 Euston Road, London, NW1 2DB, UK  
luciano.floridi@oii.ox.ac.uk

**Abstract.** Today, in many advanced information societies, asking whether one is online or offline has become meaningless. Imagine being asked whether you are online by someone who is talking to you through your smart phone, which is linked up to your car sound system through Bluetooth, while you are driving following the instructions of a GPS, which is also downloading information about traffic in real-time. The truth is that we are neither online nor offline but onlife, that is, we increasingly live in that special space that is both analog and digital, both online and offline. An analogy may help. Imagine someone asking whether the water is sweet or salty in the estuary where the river meets the sea. That someone has not understood the special nature of the place. Our information society is that place. And our technologies are perfectly evolved to take advantage of it, like mangroves growing in brackish water. In the mangrove society, all relevant (and sometimes the only) data available are machine-readable, and decisions as well as actions may be taken automatically, through sensors, actuators, and applications that can execute commands and output the corresponding procedures, from alerting or scanning a patient, to buying or selling some bonds. The consequences of such radical transformation are many, but one is particularly significant and rich in consequences: what is the human project we should pursue in designing the mangrove society? This is the question I shall discuss in the talk, in view of exploring a possible answer.

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