Introduction

When users interact with online services (e.g. search engines, recommender systems, conversational agents), they leave behind traces of interaction patterns. The ability to record and interpret user interaction signals and understand user behavior gives online systems a vast treasure trove of insights for improvement and experimentation. More generally, the ability to learn from user interactions promises pathways for solving a number of problems and improving user engagement, incorporating user feedback and gauging user satisfaction.

Understanding and learning from user interactions involves a number of different aspects - from understanding user intent and tasks, to developing user models and personalization services. Beyond understanding user needs, learning from user interactions involves developing the right metrics and experimentation systems, understanding user interaction processes, their usage context and designing interfaces capable of helping users. As such, understanding user behavior could allow the system to supporting users at the various stages of their tasks. This could have implications on many aspects of the system design including user interface, presentation of information, retrieving and ranking, etc.

Learning from user interactions becomes more important as new and novel ways of user interactions surface. There is a gradual shift towards searching and presenting the information in a conversational form. Chatbots, personal assistants in our phones, smart speakers and other eyesfree devices are being used increasingly more for different purposes, including information retrieval and exploration. With improved speech recognition and information retrieval systems, more and more users are increasingly relying on such digital assistants to fulfil their information needs and complete their tasks. Such systems rely heavily on quickly learning from past interactions and incorporating implicit feedback signals into their models.

Topics of interest

The goal of the special issue is to research systems which better support user needs and tasks, understand user interaction processes, intelligent and adaptive interfaces, among others. Specific topics of potential interest include:

- **User Interaction Processes & Context** :
  - User Journey Optimization
  - Evolution of search process
  - Stages of user interactions
- User journey through the system
- Leveraging contextual signals
- Learning for user interaction optimization: algorithms, frameworks & system designs

- Intelligent interface designs:
  - Adaptive personal digital assistants
  - Tailored decision support
  - Adaptive collaboration support

- User Needs & Tasks Understanding:
  - User intent analysis/prediction
  - Task identification
  - Task aware suggestions & recommendations

- User Modeling & Personalization:
  - Short and Long-term User Modelling
  - Personalization & Diversification
  - Coherence

- Metrics and Evaluation:
  - Metrics based on user interactions
  - User engagement metrics design
  - Evaluation mechanisms; user satisfaction prediction
  - Controlled laboratory study
  - Online metrics Test collection

- Applications:
  - Conversational search, personal search, chatbots, digital assistants
  - Contextual Advertising
  - E-commerce recommendations
  - Intelligent interfaces
  - Case studies of real world implementations

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Important Dates
- Initial submission due: January 15, 2019
- Initial reviewer feedback: March 15, 2019
- Revised submission due: May 15, 2019
- Final reviews and notification: June 15, 2019

Paper Submission
Papers submitted to this special issue for possible publication must be original and must not be under consideration for publication in any other journal or conference. Previously published or accepted conference papers must contain at least 30% new material to be considered for the special issue.

All papers are to be submitted by referring to http://www.springer.com/10791 (submit online). At the beginning of the submission process in Editorial Manager, under “Article Type”, please select the appropriate special issue.

All manuscripts must be prepared according to the journal publication guidelines which can also be found on the website provided above. Papers will be evaluated following the journal’s standard review process.

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