

Preface

The Editors

The short papers presented in this collection come from two separate workshops which both ran as co-located workshops of the 11th SIGCHI ACM EICS conference held in Valencia in June 2019. Although each workshop has a different primary focus, they are both underpinned by the understanding that engineering methods are vital for interactive systems. As such, most of the papers present an engineering contribution which is then specifically focussed to the workshop topic.

2nd Workshop on Charting the Way towards Methods and Tools for Advanced Interactive Systems

Engineering interactive systems is a multidisciplinary endeavour positioned at the intersection of HCI, software engineering, interaction design, and other disciplines. In recent years, the range of interactive techniques available and their applications has broadened considerably and can be expected to grow even further in the future. While new interaction techniques offer the prospect of improving the usability and user experience of interactive systems, they also pose new challenges for methods and tools that can support their design, development and evaluation in a systematic engineering-oriented manner. This is aggravated by the fact that they are increasingly being applied in novel and less understood application domains (e.g., wearable medical devices) and embedded emerging technologies (e.g. AI-based systems).

New and novel interaction techniques involve aspects that are currently not sufficiently covered by existing Human-Computer Interaction Engineering (HCI-E) methods/tools such as design spaces, task models, model-based approaches, toolkits, evaluation methods. This may require new methods/tools or adaptations/extensions of existing methods/tools. The workshop, organized by IFIP WG 2.7/13.4 on User Interface Engineering, aims at identifying, examining and structuring the engineering challenges related to novel forms of interaction or to emerging themes in HCI due to new application domains.

The thirteen papers accepted at the workshop reflect the challenges above and served as the starting point for the discussion. Accepted papers discussed the challenges faced when designing and developing for a range of application domains, from Smart Environments (such as smart homes) to Human-Robot Interaction or interaction in hyper-connected cars. The use of advanced interaction modalities such as augmented reality or gestures was also discussed. Finally, two clear concerns are ensuring the quality of the developed systems (in particular, but not restricted to, when considering safety critical contexts), and the impact of artificial intelligence on interactive computing systems.

Papers were solicited from the IFIP WG 2.7/13.4 members and from the wider EICS community. Each paper underwent a double-blind review process with 3 reviewers for

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each paper selected from a programme committee which had been put together based on expertise in the relevant areas. Following this process thirteen of the submitted papers were accepted and authors of these papers were invited to amend their submission based on reviews prior to presentation at the workshop. For the final proceedings published here, authors were also invited to make revisions based on feedback received during their presentation.

1st Workshop on Research and Practice Challenges for Engineering Interactive Systems while Integrating Multiple Stakeholders Viewpoints

The main goal of this workshop was to offer a platform for scientists who are interested in the **design, development and use of interactive systems involving multiple stakeholders** with different viewpoints integrated before, during or after the development of the interactive system. More precisely, the **first objective** was to identify and gather information about knowledge and practice in the workshop's domain:

- Get an overview of current practices in multi-stakeholder R&D practices (methods/notations/tools) to engineer usable interactive systems as well as lessons learned and recommendations;
- Identify a systematic approach for describing multiple stakeholders' viewpoints and assessing their impact on properties such as users' UX and systems' usability;
- Understand how multiple stakeholder identify properties to describe them and to assess their relative importance (going beyond the classical UX and usability but also address performance, dependability, safety, ...);
- Understand how multiple stakeholders reach agreements and trace design decisions and their rationale.

The **second objective** was to elicit the main gaps in information gathering and exchange among multiple stakeholders using the identification activities described above. The activities carried out during the workshop aimed to identify the current state of knowledge in the scope of the workshop but also to **outline a research agenda** from bringing together diverse and sometimes competing views from multiple stakeholders. One critical aspect of handling information and activities from stakeholders with multiple and diverse perspectives is how to represent, store, use and maintain this information. Another one is the detailed description of the stakeholder (their role, knowledge, characteristics, level of responsibility ...).

For selecting papers, the workshop's organizers conducted a single-phase review process in which all workshop submissions were peer reviewed by multiple members of the workshop's international and multi-disciplinary program committee. Based on the reviews, 7 papers were selected for presentation at the workshop and inclusion in the proceedings. These final papers are lightly edited versions of the submissions taking into account reviewer feedback.