

ICAS 2020

Forward

The Sixteenth International Conference on Autonomic and Autonomous Systems (ICAS 2020) continued a series of events covering topics related to systems automation, autonomous systems and autonomic computing.

Pervasive services and mobile computing are emerging as the next computing paradigm in which infrastructure and services are seamlessly available anywhere, anytime, and in any format. This move to a mobile and pervasive environment raises new opportunities and demands on the underlying systems. In particular, they need to be adaptive, self-adaptive, and context-aware.

Adaptive and self-managed, context-aware systems are difficult to create; they must be able to understand context information and dynamically change their behavior at runtime according to the context. Context information can include the user location, his preferences, his activities, the environmental conditions and the availability of computing and communication resources. Dynamic reconfiguration of the context-aware systems can generate inconsistencies as well as integrity problems, and combinatorial explosion of possible variants of these systems with a high degree of variability can introduce great complexity.

Traditionally, user interface design is a knowledge-intensive task complying with specific domains, yet being user friendly. Besides operational requirements, design recommendations refer to standards of the application domain or corporate guidelines.

Commonly, there is a set of general user interface guidelines; the challenge is due to a need for cross-team expertise. Required knowledge differs from one application domain to another, and the core knowledge is subject to constant changes and to individual perception and skills.

Passive approaches allow designers to initiate the search for information in a knowledge-database to make accessible the design information for designers during the design process. Active approaches, e.g., constraints and critics, have been also developed and tested. These mechanisms deliver information (critics) or restrict the design space (constraints) actively, according to the rules and guidelines. Active and passive approaches are usually combined to capture a useful user interface design.

All these points pose considerable technical challenges and make self-adaptable context-aware systems costly to implement. These technical challenges lead the context-aware system developers to use improved and new concepts for specifying and modeling these systems to ensure quality and to reduce the development effort and costs.

We take here the opportunity to warmly thank all the members of the ICAS 2020 technical program committee, as well as all the reviewers. The creation of such a high quality conference program would not have been possible without their involvement. We also kindly thank all the authors who dedicated much of their time and effort to contribute to ICAS 2020. We truly believe that, thanks to all these efforts, the final conference program consisted of top quality contributions. We also thank the members of the ICAS 2020 organizing committee for their help in handling the logistics of this event.

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