Highlighted Activities of ICCASA 2015

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Abstract

The Fourth International Conference on Context-Aware Systems and Applications (ICCASA 2015) [1] is jointly organized by EAI, Nguyen Tat Thanh University (NTTU), and Ba Ria-Vung Tau University (BRVTU) and endorsed by the European Alliance for Innovation (EAI), a leading community-based organization devoted to the advancement of innovation in the field of ICT. The event consists of a main track on context-aware systems and applications, and two special tracks on contextual recommendation systems and on computational aspects of context in natural language processing, respectively. Especially, there are three keynote speeches, which will be presented at ICCASA 2015 by prominent invited speakers

1. Introduction

The Fourth International Conference on Context-Aware Systems and Applications (ICCASA 2015) [1] jointly organized by EAI, Nguyen Tat Thanh University (NTTU), and Ba Ria-Vung Tau University (BRVTU) is a place for highly original ideas about how context-awareness is going to shape networked computing systems of the future. Hence, it focuses on rigorous approaches and cutting-edge solutions which break new ground in dealing with the properties of context-awareness. Its purpose is to make a formal basis more accessible to researchers, scientists, professionals and students as well as developers and practitioners in ICT by providing them with state-of-the-art research results, applications, opportunities and future trends. For this fourth edition, we hope to repeat the success of previous year, when the conference received many papers and the participation of a large number of students, researchers, and professionals from all over the world.

Relevant topics include the following:

- Fundamentals of Context-aware systems

- Context-aware Systems:

- Context-aware Technologies:

The event is endorsed by the European Alliance for Innovation (EAI), a leading community-based organization devoted to the advancement of innovation in the field of ICT. All accepted papers will be published by Springer and made available through SpringerLink Digital Library, one of the world's largest scientific libraries. The proceedings are submitted for inclusion to the leading indexing services: DBLP, Google Scholar, Thomson Scientific ISI Proceedings, EI Elsevier Engineering Index, CrossRef, Scopus, as well as ICST's own EU Digital Library (EUDL).

2. Special Tracks

Special tracks in ICCASA 2015 will provide a meeting for presenting novel ideas in a possibly more focused way than the conference itself. Its aim is to engage in active exchange, interaction, and comparison of approaches, methods, and ideas related to specific topics, both theoretical and applied, in the general area of context-awareness.

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2.1. Track on Contextual Recommendation Systems (CtxRecSys)

Recommendation system is an interesting topic for a large number of researchers over recent years. There are several approaches, models and techniques that can deal with some issues in recommendation systems. Most of existing approaches have focused on recommending the most relevant items to users without considering any additional contextual information, such as time, location, and expertise. In many applications, it contains several useful data to extract more information about the users. For example, using spatial context, a restaurant recommendation system can provide different lists of places for the same user, depending on his/her current locations. As another example, in music recommendation system, user may listen to romantic songs at the weekend but he/she may like jazz before sleeping. Many issues such as contextual information integration, context-aware recommendation techniques combination and evaluation approaches still remain open. Therefore, this track tries to be meeting point where researchers and practitioners in areas of Knowledge Management and Social Sciences, Collective Intelligence could have the opportunity to present current research results, to share their research achievements and solutions, and to look for new idea of context-aware recommendation systems.

Relevant topics include the following:

- Context-aware information retrieval
- Context-aware profiling, clustering and collaborative filtering
- Machine learning for context-aware information retrieval and ontology learning
- Context-aware e-learning/tutoring
- Ubiquitous and context-aware computing
- Context-aware advertising
- Recommendations for mobile users
- Context-awareness in portable devices
- Context-aware services
- Social and Conversational Agents
- Social Behavior
- Understanding Human Activity
- Memory and Long-term Interaction
- Cases studies from Collective intelligence applied to CtxRecSys
- Cases studies from Social Sciences applied to CtxRecSys

2.2. Track on Computational Aspects of Context in Natural Language Processing (CACNLP)

The vision of this special session is focused on computational aspects of context in natural language processing. The emergent issues of context-awareness include methods of context modeling and computing, impacts of context on meaning, natural language understanding and argumentation, interpretation of contextual information in theoretic and empirical models, and so on.

Relevant topics include the following:

- Context modeling and computing
- Context in natural language and speech processing
- Context in natural language understanding
- Context in natural language argumentation
- Context in discourse
- Context in dialog
- Context in information retrieval
- Context-awareness in (multidisciplinary) multimedia data analysis and mining, machine learning, knowledge representation and discovering

3. Keynote Speeches

The keynote speeches establish the framework for the technical program of ICCASA 2015. This year we choose three prominent invited speakers, Prof.Vangalur Alagar from Concordia University in Canada; Prof.Chintan Bhatt from Charotar University of Science And Technology in India and Prof. Phan Cong Vinh from Nguyen Tat Thanh University in Vietnam

3.1. Autonomic Urban Traffic Controller System – A Cyber-physical Systems Approach

Prof.Vangalur Alagar will give a talk at ICCASA 2015 on a hot topic of Cyber-Physical Systems (CPS) with the title of "Autonomic Urban Traffic Controller System - A Cyber-physical Systems Approach"

In almost every country in the world transportation infrastructure is severely overstressed. The traditional traffic control infrastructures have become awfully inadequate to handle the modern-day vehicular traffic, which can be characterized by density of traffic, speed of vehicles, behavior of human drivers, and constraints imposed by the traffic regulation policies laid down by urban administrators. Consequently, roadway corridors regularly experience increased level of traffic congestion, not only in developed countries such as United States, Canada and Europe, but also

in all developing countries. Several reports have quantified the loss of productivity and wasted fuel usage resulting from traffic congestions. According to one report, in 2013 traffic congestion in U.S.A has cost Americans 124 billion US Dollars in direct and indirect losses, and this amount is estimated to rise 50 percent by 2030. Wasted fuel in traffic congestion is not only contributing to monetary loss but also a threat to health because of the steep increase in environmental pollution.

3.2. Toward IoT Universe

Prof.Chintan Bhatt will give a talk at ICCASA 2015 on a hot topic of Internet of Things (IoT) with the title of "Toward IoT Universe"

Ambient intelligence and autonomous control are not part of the original concept of the Internet of Things. Ambient intelligence and autonomous control do not necessarily require Internet structures, either. However, there is a shift in research to integrate the concepts of the Internet of Things and autonomous control, with initial outcomes towards this direction considering objects as the driving force for autonomous IoT. In the future the Internet of Things may be a non-deterministic and open network in which auto-organized or intelligent entities (Web services, SOA components), virtual objects (avatars) will be interoperable and able to act independently (pursuing their own objectives or shared ones) depending on the context, circumstances or environments. Autonomous behavior through collecting and reasoning context information plays a significant role in IoT. Modern IoT products and solutions in the marketplace use variety of different technologies to support such context-aware automation.

3.3. Recent Advances in Autonomic Computing

Prof.Phan Cong Vinh will give a talk at ICCASA 2015 on a hot topic of autonomic computing with the title of "Recent Advances in Autonomic Computing"

A common way to interpret self-* in autonomic systems (ASs) is to say that self-* actions are running on ASs. Triggers of self-* actions from self-* can be performed concurrently to transform one AS state into another. A first rule for self-* actions is this: the performance of a sequence of several self-* actions is itself the performance of a self-* action - a more complex self-* action, but a self-* action nonetheless. Algebraic objects called monoids are tasked with encoding the self-* actions perspective in all this, i.e. what the self-* action can do, and what happens when different self-* actions are done in succession. A monoid can be construed as a set of self-* actions, together with a formula that encodes how a sequence of self-* actions is itself considered a self-* action.

References

[1] ICCASA 2015: http://iccasa.org/2015/show/home