



Call for papers

Special session on Computational Awareness and Knowledge Engineering

(CAKE)

at the 3rd IEEE International Conference on Cybernetics (CYBCONF 2017)

Exeter, UK, June 21-23 2017

Conference website: <http://cse.stfx.ca/~CybConf2017>

(1) Special Session Organizers:

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(2) General description of the SS

Both in our daily life as well as in organizational management, we are benefitted by novel tools developed by AI researchers. AI techniques are used in all sorts of decision making process in city planning/development, economy, commerce and banking. In spite of various AI applications, most of them are developed to work on a static environment, and lack the autonomous dynamic updates necessary to deal with our changing environment. Therefore, one reasonable question arises as, “how to build a system capable of interacting with the dynamically changing environment and update itself with the changing requirements?” Self-governable system, as a method to deal with this question, has the capability to make responses autonomously to the changing world by continuous learning. This capability means that the systems will be aware of the dynamic environment and ways to achieve the changing goals. Hence, computational awareness (CA) is an indispensable component for self-governable systems. In essence, computational awareness is the process of extracting abstract knowledge from concrete

information and data. Therefore, the technologies from the domain of knowledge engineering may provide technical tools for implementing computational awareness. This special session tries to provide a platform for discussion of applying knowledge engineering technologies in computational awareness.

Standing at the frontier of artificial intelligent, computational awareness requires the adoption of new methodology and techniques for implementing the autonomously controlled systems. This special session will primarily encompass theories, mechanism, methods and applications of implementing computation awareness with knowledge engineering. The goal of this special issue is to come up with potential solutions to the following issues, including but not limited to:

- How to model, represent and manage knowledge acquired from different information and data resources?
- How to effectively acquire knowledge from information and data resources?
- How to develop computational awareness systems for solving industrial problems?

(3) Topics of Interests

This special session calls for original papers describing the latest developments, trends, and solutions related to the issues of computational awareness technology. Topics of interests include, but are not limited to:

- **Awareness mechanism and modeling**
- **Machine learning technologies**
- **Computational awareness**
- **Knowledge representation**
- **Fuzzy logic / rough set**
- **Awareness ontology and semantic**
- **Context/situation awareness**
- **Software framework for awareness**

(4) Important Dates

- **Paper Submission: 23 March 2017**
- **Authors Notification: 22 April 2017**
- **Camera-Ready Paper: 15 May 2017**
- **Early Registration: 15 May 2017**
- **Conference Date: 21-23 June 2017**

(5) Program Committee

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- Zhaohui Jiang, Hiroshima Institute of Technology, Japan
- Zhelong Wang, Dalian University of Technology, China
- Zhishun She, Glyndwr University, United Kingdom

(6) Submission and Publication

Authors are invited to submit original previously unpublished research papers written in English, of up to 8 pages (or 10 pages with over length charge) including figures and references using IEEE Computer Society Proceedings Manuscripts style (two columns, single-spaced, 10 fonts). Please find the manuscript templates and submission related information at the CYBCONF 2017 conference webpage. All accepted papers must be presented by one of the authors who must register for the conference and pay the fee.

Presented papers will appear in the conference proceedings, available on IEEE Xplore and submitted to be indexed in CPCi (ISI conferences and part of Web of Science) and Engineering Index (EI). The authors of selected best papers will be invited post conference to extend their contributions for special issues of prestigious journals, such as IEEE Transactions on Cybernetics, IEEE SMC Magazine, Evolving Systems, and Peer-to-Peer Networking and Applications (PPNA).