Call for paper
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Special issue on
"Learning and assessment in natural and artificial systems"

Guest Editors:

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This special issue aims to share novel ideas around the multifaceted interface that connects learning and assessment with the processes, practices and models of natural, artificial cognition and technologies. Learning is a peculiar characteristic of many natural organisms, which can modify their behaviours during lifetime, to address new and progressively more complex challenges. Dynamics of learning processes and cognitive requirements for supporting learning in natural organisms is a long-standing and very important trend of research in psychology, education as well as anthropology. In the same vein, the research in cognitive science and artificial intelligence has the ambition to replicate such processes, as well as to suggest novel and alternative cognitive models capable to learn from their experiences. Those two lines of research are more and more integrated, in that it is often difficult to disentangle the contribution of the two approaches in modern psychology, education, learning sciences and computer science/robotics.

On the other side, assessing the lifetime changes and the extent to which an agent possesses certain cognitive capabilities is a common problem that challenges both the study of natural and artificial domain. Looking at the concept of intelligence is indeed an interesting example of the current challenges. Intelligence is regarded very differently in those two domains: AI systems have the ambition to be indistinguishable from humans (it is the assumption of the well know Turing's test), or

even to outperforms humans on certain domains. However, human intelligence is defined and assessed under completely different assumptions. Specific psychometric tools and protocols are currently used worldwide to identifies intelligent deficits, as well as learning problems. In this respect, the next level in AI and cognitive science is to compare artificial systems under similar, or at least comparable, assumptions and theoretical models of that used by psychology and educational theories. At the same time, the great advances in those areas should inform the research in learning sciences and suggest alternative models and assumptions under which natural systems might be investigated and, ultimately, assessed.

Under this perspective, the special issue seeks contribution from researchers operating in the field of natural and artificial cognition, in connection to the following, not exhaustive, domain of learning and assessment:

- Learning models and processes;
- Technologies and AI for learning and assessment;
- Serious games;
- Cognitive capabilities, e.g. intelligence, learning, spatial abilities, language, motor skills;
- Educational robotics;
- Cognitive robotics;
- Artificial Intelligence;
- Artificial cognitive systems;
- Machine learning;
- Neural networks and deep learning models;
- Artificial tutoring systems;
- Learning analytics;
- Human-machine and human-robot interactions;

All papers received will be blind-reviewed. We accept contributions in English.

Instructions for submitting an article can be found at the following web address

http://www.ckbg.org/qwerty/index.php/qwerty/about/submissions#onlineSubmissions

The articles must be written respecting the APA norms available at:

http://www.apastyle.org/

For information or requests, please contact: qwerty.ckbg@gmail.com

Important dates:

• March 30th, 2019: submission of the manuscripts

• May 30th, 2019: notification of acceptance (with any requested change)

• August 30th, 2019: final manuscripts due

• December 10th, 2019: publication of the issue