Call for Papers

WSEAS TRANSACTIONS ON SYSTEMS

Special Issue on Self Adaptive System and Autonomic Machine Learning

I. AIM AND SCOPE

The present special issue is concerned with concepts and techniques which can rely on metaphors of nature and which are inspired from biological and cognitive plausibility. Recent studies are conducted which reveal that the foundations of autonomic machine learning where the term autonomic refers to the emerging non-imperative and highly autonomous machine learning mechanism and self adaptive system, has its root in cognitive informatics theories and automatic computing technologies. Being the basis for many modeling approaches and computational techniques, it offers a very promising foundation for investigating the adaptivity of intelligent systems that evolve in dynamically changing environments. Self adaptive system and autonomic machine learning involves a large spectrum of theories from learning theory to nature inspired optimization metaheuristics. Conventional machine learning systems utilizes the merits of imperative and instructive programming techniques in AI. In recent days learning mechanism in the brain and natural intelligence has greatly enhanced and inspired the investigation into autonomic learning system. The autonomic machine learning systems are a fully goal driven and non-imperative system that possesses powerful machine intelligence for knowledge acquisition, processing, comprehension and memorization based on contemporary denotational mathematics and autonomic learning techniques. Despite the existing literature on adaptivity and machine learning, the notion of "incrementality" as a property of self-adaption, self-organization, self-monitoring and self-growing has not yet been well studied. Rigorous theories, empirical methodologies, and industrial application on adaptive and autonomic machine learning systems are sought for this special issue to advance the cross fertilization between autonomous system cognitive informatics and autonomic computing.

This special issue aims at presenting the latest advances of self-adaptivity and autonomic machine learning with focus on modeling approaches, computational methods, autonomic, autonomous and adaptive machine learning theories, technologies and systems. The special issue is intended for a wide range of audience including neural network scientists, mathematicians, engineers, computer scientists' biologists, economists and social scientists. This special issue will cover various topics of self-adaptive system and autonomic machine learning concepts. It also aims at presenting coherent view of the issues and a thorough discussion about the future research avenues. A sample of the targeted topics, which is suggestive rather than exhaustive, includes:

II. TOPICS COVERD

Authors are invited to submit their original and unpublished work in the following areas:

Self growing systems
Online adaptive and life-long learning
Incremental and single-pass data mining
Incremental clustering
Self-monitoring in evolving systems
Novelty detection in evolving learning
Adaptive decision systems
Methodologies of self-organization
Neural networks
Adaptation in changing environments
Incremental adaptive neuro-fuzzy systems
Incremental classification systems
Concept drift in evolving systems
Incremental diagnostics
Incremental feature selection and reduction
Principles of self-organization
Dynamic optimization
Evolutionary computation

Swarm intelligence
Mimetic Algorithm
Ambient / ubiquitous environments
Intelligent agent technology
Industrial applications
Autonomic learning mechanisms
Denotational mathematics
Concept algebra
Cognitive informatics
Machine tutoring systems
Taxonomy of learning
Modeling of learning processes
Internal knowledge representation
Problem domains for AMLS's
Web-based learning engines
AMLS simulations
Industrial requirements
Case studies on AMLS's
Autonomic robots
Autonomic learning support systems
Fuzzy systems
Smart systems
Distributed intelligence
Robotics
E-commerce
AMLS architectures
AMLS behaviors
AMLS interactions
AMLS communications
AMLS knowledge-base representations
AMLS knowledge acquisitions
AMLS inference engines
Autonomic computing
Formal inferences methods
Non-imperative learning methods
Fuzzy inference methods
Learning and problem-solving
Learning and memorization
Cognitive agents
Taxonomy of learning

III. IMPORTANT DATES

May 30, 2015	:	Submission deadline
July 30, 2015	:	Notification of the first-round review
September 30, 2015	:	Revised submission due and following publication of the accepted papers

IV. SUBMISSION

Manuscripts should be prepared according to the formatting instructions of available at WSEAS Transactions on Systems at http://wseas.org/wseas/cms.action?id=4067. Manuscripts submitted to the *Special Issue on Self Adaptive System and Autonomic Machine Learning* are to be submitted following the standard submission process and notifying the Guest Editors as well. All submitted manuscripts will be reviewed using the standard procedure that is followed for regular submissions.

V. GUEST EDITORS

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