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EiC Editorial

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In the last years, Artificial Intelligence (AI) research has grown continuously. AI allows more and more machines to perceive, interact, think, learn. AI algorithms are nowadays capable of handling imprecise data and solving complex tasks and problems with impressive outcomes.

AI has become a highly pervasive paradigm, and, as time goes on, it will become more and more pervasive and interdisciplinary. Transdisciplinary AI (TransAI) is a discipline that focuses on the interactions between artificial intelligence (AI) and other research disciplines. It addresses the applications of AI to specific research disciplines and also focuses on how domain-specific applications may advance the research on AI.

This inauguration issue of the International Journal of Transdisciplinary AI collects four selected papers that have been presented at the 13th IEEE International Conference on Semantic Computing (ICSC 2019, Jan 30 - Feb 1, 2019). The selected papers have been extended with new and unpublished material for at least 30%. Moreover, they were further rigorously reviewed.

The first paper is entitled "Ontology of Card Sleights", authored by Aaron Sterling from the Department of Computer Science of the Iowa State University, USA. The work illustrates a manner to record card trick methods by using a Description Logic fragment of the Web Ontology Language (OWL-DL) and the building of an Ontology of Card Sleights by extending the Basic Formal Ontology. The paper discusses also design criteria that have been used to ensure the ontology can be accessed and modified with a simple user interface.

The second paper is entitled "Enabling the Continuous Evolution of Ontologies for Ontology-Based Data Management", co-authored by André Pomp, and Johannes Lipp from the Institute of Information Management in Mechanical Engineering, RWTH Aachen University, Germany, and Tobias Meisen, Chair of

Technologies and Management of Digital Transformation, University of Wuppertal,Germany. The work illustrates an evolving knowledge graph that includes an internal ontology, which is updated as domain experts add new data sources. Furthermore, it defines the mapping between the ontology and the data source and automatically links related concepts of the ontology. The aim of the work is enhancing the process of designing and maintaining an ontology.

The third paper is entitled "Arabic Poem Generation incorporating deep learning and Phonetic CNNsubword embedding models", co-authored by Sameerah Talafha from the Department of Computer Science, Southern Illinois University, USA and Banafsheh Rekabdar, from the Department of Computer Science, Southern Illinois University, USA. The work illustrates a poetry generation model with extended phonetic and semantic embeddings for the Arabic Language. The proposed poetry generation model consists of a two-stage approach: firstly the generation of the first verse which explicitly incorporates the theme-related phrase; subsequently other verses are generated by using a Hierarchy-Attention Sequence-to-Sequence model (HAS2S), capturing words, phrase, and verse information between contexts.

The fourth paper is entitled "Techniques for Named Entity Recognition on Arabic-English Code-Mixed Data", co-authored by Caroline Sabty and Ahmed Sherif from the Computer Science and Engineering Department, The German University in Cairo, Egypt. The work deals with the collection and the building of the first annotated Code-Mixed (CM)Arabic-English corpus for Named-Entity Recognition (NER). Moreover, a baseline for the NER system is proposed. It exploits deep neural networks and word embeddings for Arabic-English CM text. Furthermore, an investigation on the use of different types of classical and contextual pre-trained word embeddings on the proposed system has been conducted.

We welcome contributions from academia and industry; we are confident that transdisciplinary AI will continue to develop and grow more and more, giving innovative solution both on technology and academic research.