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# Knowledge Engineering Paradigms for Smart Education and Learning Systems

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Professor Dr. Abdel-Badeeh M. Salem will give the invited talk about Knowledge engineering paradigms. His research includes intelligent computing, expert systems, biomedical informatics, and intelligent e-learning technologies, knowledge engineering and biometrics.

## *Short description:*

Knowledge engineering (KE) is a subarea of artificial intelligence. KE paradigms deal with the development of intelligent systems in which reasoning and knowledge play pivotal role. Recently, KE, computational intelligence and machine learning paradigms have become more widespread within the fields of smart education and learning. Developing of smart education/learning systems is very difficult from the technological perspective and a challenging task. In this talk we focus our discussion around the most efficient KE paradigms, namely: ontological engineering, data mining, and case-based reasoning, which are used in developing of such systems. In addition, the talk presents some examples of the developed systems by the author and his colleagues at Artificial Intelligence and Knowledge Engineering Research Lab (SHAMS -AIKERL) at Ain Shams University, Cairo, Egypt.

## **More about Abdel-Badeeh M. Salem:**

Prof. Dr. Abdel-Badeeh M Salem is a full Professor of Computer Science since June 1989 at the Faculty of Science, Ain Shams University, Cairo, Egypt. In 1996 he moved to the Faculty of Computer and Information Sciences. Now he is a professor emeritus since October 2007. He was a Director of Scientific Computing Center at Ain Shams University (1984-1990). He has published around 500 papers in refereed journals and conference proceedings in these areas, 91 of them are indexed in Scopus. He has been involved in more than 500 conferences and workshops as a plenary speaker, member of International Program Committees, workshop/invited session organizer and Session Chair. Also, he is an author and co-author of 25 books in English and Arabic languages.

He was one of the founders of the following events - First Egyptian Workshop on Expert Systems 1987, International Cairo Conference on Artificial Intelligence Applications in 1992 and International Conference on Intelligent Computing and Information Systems 2002, and one of the main sustainers of annual International Romanian Internet Learning Workshop Project - RILW (1997). In addition he was a Secretary of Egyptian Computer Society (1984-1990), member of National Committee in Informatics – Academy of Scientific Research and Technology (1992-2000), member of Egyptian Committee in the Inter-Governmental Informatics Program - IIP-UNISCO, Paris (1988-1990) and coordinator of the Annual International Conference for Statistics, Scientific Computing, and Social and Demographic Research (1983-1990). In addition he was a partner of a MEDCAMPUS Projects on Methodologies and Technologies for Distance Education in Mediterranean (1993-1995). In addition he is a Member of the Editorial Board of 50 international and national Journals in the following countries: Canada, Italy, Romania, Japan, Turkey, UK and Egypt. Also, he is member of many international scientific societies and associations in the USA, UK, Switzerland, Austria, Canada and Egypt. He is the Editor-in-Chief of the International Journal of Bio-Medical Informatics and e-Health (India), Egyptian Computer Science Journal and Associate Editor of International Journal of Applications of Fuzzy Sets and Artificial Intelligence (Greece). Elected member of Euro Mediterranean Academy of Arts and Sciences on September 25, 2015 in Athens, Greece. Member of Alma Mater Europaea of the European Academy of Sciences and Arts, Belgrade, January 2016. Elected member of European Academy of Sciences and Arts, Class VI, Salzburg, Austria.