



Sharif University of Technology
Scientia Iranica
Special Issue on: Socio-Cognitive Engineering
<http://scientiairanica.sharif.edu>



Editorial

Socio-Cognitive Engineering (*SCE*) is a multidisciplinary area of research and a basis for human-centered design of technology-oriented systems to improve human knowledge functions, judgments and decision making, collaborations, and learning. It draws on the knowledge of prospective users and involves them in the design process. It goes beyond distinct users to examine the activity schemes of people and their interaction with technology, including their social interactions, styles and working strategies, and language/communication patterns, to form a combination of human knowledge and activity that can update system design. The *SCE* framework consists of two main areas: one being the action analysis to interpret how people work and interact with their current tools and technologies, and the other being the systems design to build and implement new interactive technologies. Socio-cognitive engineering has been progressive and verified through a series of projects to improve modern technology-based systems to support learning and knowledge functions, thereby playing an essentially important role in deployment of emerging interdisciplinary engineering systems in our daily life. For instance, nowadays, Socio-Cognitive Robotics (*SCR*) is playing a major role in societies across the globe as an interdisciplinary study and application of robots that are able to teach, learn, and reason out how to behave in a complex world within the cognitive, cultural, linguistic, psychological, social, and therapeutic framework attached to their role.

This special issue aimed at presenting state-of-the-art research on topics related to the latest applications, novel research results, and developments in the area of socio-cognitive engineering and technologies. From conceptual designs and developments to system integration, inspiring artistic designs, and educational and clinical applications along with a broad spectrum of social implications were considered. This issue contains original research articles addressing problems and findings, and the latest developments in socio-cognitive engineering covering relevant advances and their social

impact on our society in arts, computing, clinical interventions, educational technologies, management, and humanities.

I wish to thank all distinguished guest editors listed as follows for their assistance and support to bring this special issue of *Scientia Iranica: Socio-Cognitive Engineering* into reality. Special thanks are also extended to the editorial staff of Scientia Iranica.

Ali Meghdari, Professor
Editor: Socio-Cognitive Engineering (SCE)
Director: Center of Excellence in Design, Robotics, and Automation,
Sharif University of Technology,
Tehran, Iran.
Home-Page: <http://meghdari.sharif.edu>
Email: meghdari@sharif.edu

Guest Editors:

M. Alemi, Associate Professor of Applied Linguistics, Educational Technology, and Social Robotics, Islamic Azad University, Tehran, Iran. Email: alemi@sharif.edu

G. André Boy, Professor of Human-Centered Design, Innovation and Art, Florida Institute of Technology, Melbourne, USA. Email: gboy@fit.edu

J.J. Cabibihan, Associate Professor of Biomedical and Mechanical Engineering, Qatar University, Doha, Qatar. Email: john.cabibihan@qu.edu.qa

O. Engwall, Professor in Speech Communication, KTH Royal Institute of Technology, School of Computer Science and Communication, Stockholm, Sweden, Email: engwall@kth.se

S. Kasaei, Professor of Computer Engineering, Sharif University of Technology, Tehran, Iran. Email: skasaei@sharif.edu

B. Khoshnevis, Professor of Industrial and Systems Engineering, University of Southern California at Los Angeles, USA. Email: Khoshnevis@usc.edu

R. Khosla, Professor of Computers, Communication and Social Innovation, La Trobe University, Mel-

bourne, Australia. Email: R.Khosla@latrobe.edu.au

M.H. Mahoor, Associate Professor of Electrical and Computer Engineering, University of Denver, Denver, USA. Email: Mohammad.Mahoor@du.edu

A. Meghdari, Professor of Mechanical Engineering and Social Robotics, Sharif University of Technology, Tehran, Iran. Email: meghdari@sharif.edu

H. Moradi, Associate Professor of Electrical and Computer Engineering, University of Tehran, Tehran, Iran. Email: moradih@ut.ac.ir

H.R. Pouretamad, Professor of Clinical Neuropsychology, Shahid Beheshti University, Tehran, Iran. Email: h-pouretamad@sbu.ac.ir

M. Nili Ahmadabadi, Professor Cognitive Systems and Electrical Engineering, University of Tehran, Tehran, Iran. Email: mnili@ut.ac.ir

M. Shahinpoor, Professor of Biomedical, Mechanical, and Robotics Engineering, University of Maine, Orono, USA. Email: shah@maine.edu

H. Verhagen, Associate Professor of Computer and Systems Sciences, Stockholm University, Stockholm, Sweden. Email: verhagen@dsv.su.se

G.R. Vossoughi, Professor of Mechatronics and Robotics, Sharif University of Technology, Tehran, Iran. Email: Vossough@sharif.edu