Special Session

Code: c3kdb

Title
Humanized Crowed Computing

Proposer / Main Organizer

Yan Pei,
University of Aizu, Japan, peiyan@u-aizu.ac.jp
Tsuruga, Ikki-machi, Aizu-Wakamatsu City, Fukushima, 965-8580, Japan

Jianqiang Li,
Beijing University of Technology, China, lijianqiang@bjut.edu.cn
100 Pingleyuan, Chaoyang District, Beijing 100124, China

Mengchu Zhou
New Jersey Institute of Technology , USA, zhou@njit.edu
Newark, NJ, 07102, USA

Peter Sinčák
TU Kosice, Slovakia, peter.sincak@tuke.sk
04001 Kosice Slovakia, European Union

IEEE Member or SMC Society Member
IEEE and SMC society member

Category
Please select one of the following categories:
Human-Machine Systems

Number of Expected Paper Submissions:
5 or more

Keywords
humanized crowd computing, crowd intelligence, crowd-powered ecosystems, enabling mechanisms, gathering of shared data

Brief Description and Justification (200-250 words):
Humanized Crowd Computing (HCC) focuses on the mechanisms and cybernetics to address the aggregation, dependencies and interactions among many involved participants in the human-centered process of knowledge discovery, decision making, and on-demand service delivery. The HCC TC aims to study how to shift the capacity,

knowledge, and power from individuals to the collaborative and crowd population. It intends to model and implement multiple individual behaviors and phenomena into systems with a crowd intelligence property. Its research falls into the fields of social and system science, business, and computer science. The exemplary HCC research areas include the fundamental of crowd sensing for aggregation and interactions in crowd-powered ecosystems, design and verification of enabling mechanisms, technologies, and systems to support the gathering of shared data from a large group of participants, optimal group decision-making, and collection and applications of crowd computing philosophy and methodologies in various domains such as personalized medicine, crowd sourcing and funding, collaborative healthcare delivery, and any forms of the economy of sharing.

The design, implementation, and operation of humanized crowd computing systems need to consider how to make the generalized concepts of the wisdom of the masses exceeding that of the wisest individual come true, which might include participant aggregation, dependency modeling and analysis, goal and functionality integration, as well as precise service delivery. To build optimal and reliable crowd computing systems, there is a great need for cybernetics and intelligent system techniques such as the incentive mechanism design for crowd data collection, big data-driven correlation/causality discovery, collaborative multi-goal decision and optimization, large-scale and multi-modal analytical modeling, and predictive verification and feedback loop control. It is highly desirable to develop innovative augmented intelligence solutions that can address unique crowd computing challenges such as the varieties of involved participants, close interactions among participants and with dynamic environments, and uncertainties in aggregated participants and reward periods.