Call for Papers - IEEE Journal on Selected Topics in Signal Processing
Special Issue on Person-Centered Signal Processing for Assistive, Rehabilitative and Wearable Health Technologies

Human-centered computing (HCC) has emerged as a major interdisciplinary subfield of engineering that puts the human at the center of research activities and places emphasis on understanding human behavior, needs, adaptation, and societal and cultural differences to design better technologies. Person-centered computing and signal processing allows HCC to focus on an *individual* user's needs and behaviors while maintaining broad applicability to the wider population through built-in flexibility and the process of co-adaptation. Co-adaptation is the bidirectional process of a human and machine both learning and adapting over time through continual use and experience. The onus of adaptation in a person-centered design lies more with the system and the modus of interaction. The complexity is mainly due to human behavior being multimodal and complex, motivated by needs that are individualized, always changing, and often implicit. Multimodal sensing is commonly targeted at the visual and auditory channels, but there are many other complementary modalities including movement, touch, vital signs, physiological response, and brain-computer interfaces. At the core of every person-centered computing system is a network of sensors. This paradigm has created a need for research to develop and validate models for person-centered systems based on intelligent, reliable, robust and adaptive sensor networks. We invite authors to submit articles representing the cutting edge in signal processing topics including (but not limited to) those listed below. Topics should be approached from a person-centered perspective, considering individualized yet generalizable designs and co-adaptation.

Applications - assistive technology: Computer vision for navigation aids, shopping assistants, social interaction assistants, tactile-vision substitution systems, and general accessibility for individuals who are blind; Audio and acoustic signal processing for speech synthesis and sensory substitution (e.g., tactile-audio) to assist individuals with disabilities in communication and computer access; Signal processing and robust classification techniques for brain-computer interfaces to assist individuals with disabilities in communication and computer access.

Applications – rehabilitation: Signal processing, feature extraction and pattern recognition techniques toward understanding and analyzing motion data from position/inertial body worn sensors, computer vision and depth information to support physical rehabilitation and therapeutic exercise.

Applications – wearable health: Signal processing, machine learning, predictive modeling and gesture/activity recognition for wearable health technology devices including physiological sensors, health monitors, and vital signs trackers; and Gait signal processing, machine learning and activity recognition for gait monitoring including step detection, stride length estimation and event detection (e.g., shuffling, freezing of gait, falls).

Models: Learning and inference tools and models adapted to person-centered signal processing and computing including alternative classification techniques; Signal processing and data fusion methods for multimodal sensor analytics; and Signal processing methods for Wireless Body Area Sensor Networks communication and data fusion.

Prospective authors should visit the IEEE signal processing website for information on paper submission. Manuscripts should be submitted at http://mc.manuscriptcentral.com/jstsp-ieee.

Important Dates
- Manuscript submission due: ~~September 1, 2015~~ (Extended) September 15, 2015
- First review completed: November 15, 2015
- Revised manuscript due: December 31, 2015
- Second review completed: February 15, 2016
- Final manuscript due: April 1, 2016
- Publication date: August 2016

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