IEEE Transactions on Haptics: Call for Papers
Special Issue on Active Touch Sensing in Robots, Humans and Other Animals

This special issue addresses the challenges posed by active sensing and interacting with the world through the sense of touch, whether the latter is implemented through a technological or biological system. *Active touch sensing* is recovering information about the world by 'touching' rather than 'being touched' – by interpreting signals from sensors whose motion is deliberately controlled to facilitate information gain.

The scope of this issue includes both biological and technological systems for active touch sensing, and implications for haptics. This issue will consider electronic systems for active touch sensing that are biologically inspired systems, in addition to other inherently active approaches to touch sensing.

Biological systems for active touch sensing are highly capable, and, by comparison, the field of robotic touch sensing is in its infancy. The former demonstrate many valuable concepts for active touch sensing that are being intensively investigated. They have also illustrated ways that active touch sensing is enabled through specialized sensory transduction channels, biomechanics, structural morphology, behavioral, and control strategies that are implemented by biological systems, and through other advantages that they achieve, including robustness, adaptability, and power efficiency. Similar challenges must be overcome if technological systems are to one day achieve comparable levels of sensorimotor performance to biological systems.

Topics of interest include:

- **The design of electronic or biological systems for active touch sensing, their principles of operation (electronic, biological, mechanical) and performance.**
- **Biomechanical aspects of active touch sensing.**
- **Relations between active touch sensing and behavior, especially motor activity.**
- **Sensory information processing and sensorimotor control strategies in humans, animals, or robots related to active touch sensing, including behavioral, physiological or neuroscience investigations, and neural control.**
- **Learning by active touch.**
- **Applications to the design of haptic interfaces.**

Authors should specifically include a discussion of how their results shed light on fundamental aspects of active touch sensing rather than assuming that this can be inferred from context.

Timeline

June 1, 2015	Deadline for paper submissions
August 1, 2015	First decisions to authors
November 1, 2015	Second decisions to authors
February 1, 2016	Final publication materials due from authors
May 1, 2016	Special issue publication

Submission Process

Visit http://www.computer.org/toh to view formatting requirements, and submit your paper at https://mc.manuscriptcentral.com/th-cs. When uploading your paper please select the appropriate special issue title under the category "Manuscript Type."

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