

Human-Habitat for Health (H3): Human-habitat multimodal interaction for promoting health and well-being in the Internet of Things era

Call for papers

In the Internet of Things era, digital human interaction with the habitat environment can be perceived as the continuous interconnection and exchange of cognitive, social, and affective signals between an individual or a group, and any type of environment built for humans. Through the integration of various interconnected devices, we can collect multimodal data including speech, spoken content, physiological, psychophysiological, and environmental signals, that enable the sensing of a person's activity, mood, emotions, preferences, and/or health state, and ultimately provide appropriate feedback. Applications of these include artificial conversational agents, such as Amazon Alexa and Google Home, that enable voice powered human computer interaction to provide new information or conduct procedural tasks, in-the-moment automatic habitat adaptation systems that provide comfort and relaxation, human health and well-being support systems that are able to track the progress of a disease, detect high-risk episodes, and ultimately provide feedback or take appropriate. For example, such systems can monitor linguistic and acoustic markers of patients with depression, predict suicidal tendencies, and take appropriate action, or track individuals' stress levels and guide them through mini-interventions. Some of the challenges involved in these tasks include the diverse nature of the acquired data, the high variability present in habitat environments, and the inherent unpredictability and multi-faceted nature of human behavior. The H3 workshop aims to bring together experts from academia and industry spanning a set of multi-disciplinary fields, including computer science, speech and spoken language understanding, construction science, life-sciences, health sciences, and psychology, to discuss their respective views of the problem and identify synergistic and converging solutions.

A special issue of a journal based on the selected contributions from the workshop is planned.



Workshop topics

We encourage submissions including, but not limited to, the following topics:

- Open challenges in capturing and modeling human-habitat interaction (e.g., scarcity of available data)
- Audio processing applications for habitat environments, including speech recognition, speaker identification, emotion and mood recognition
- Spoken language understanding applications that consider user state, emotions, personalization, and other user or environment context
- Physiological signal processing, including noise removal, motion artifact elimination, feature extraction
- Integration of environmental sensors (e.g., temperature, humidity, lighting) for building context-specific models of human behavior and affect
- Human-computer interaction in the habitat environment (e.g., conversational agents, assistive/leisure robots)
- Well-being and clinical applications including promoting user comfort, or health-state monitoring and intervention
- Human interaction with virtual reality environments
- Privacy and ethical considerations when developing smart environments and related applications

Author instructions

We invite the submission of papers (max 8 pages), short papers and demos (max 4 pages). According to the ICMI 2018 guidelines, the reviewing will be double blind, so submissions should be anonymous: do not include the authors' names, affiliations or any clearly identifiable information in the paper. It is appropriate to cite past work of the authors if these citations are treated like any other (e.g., "Smith [5] approached this problem by...") - omit references only if it would be obviously identifying the authors. Submitted papers should conform to the ACM publication format. For templates and examples, please click on the following link: <https://www.acm.org/publications/proceedings-template>

Note: Please use the latest ACM_SigConf format for both short and long paper submissions.

The papers should be submitted to PrecisionConference (<https://new.precisionconference.com/user/login?society=sigchi>). The workshop proceedings will be published in the ACM Digital Library.

Authors will need to create a new account to log into the new Precision Conference system for submissions, even if they already have an account through the old Precision Conference system.

Paper submission and acceptance deadlines

Paper submission deadline: June 30th, 2018

Notification to authors: July 31st, 2018

Workshop date: October 16th, 2018

Workshop organizers

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