ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMM)

Call for papers

Special issue on
Representation, Analysis and Recognition of 3D Humans

Modeling, processing, recognizing, searching, and retrieving 3D human data (shapes, gestures, interactions) is a well-established research area in Multimedia. In the last decade, there has been a tremendous increase in opportunities for using 3D human data in medicine, security, and human computer interaction, largely driven by the development of effective devices and algorithms for recovering 3D data (e.g., Microsoft Kinect, Intel RealSense, Google Project Tango, and Apple Prime-Sense). Such rich information opens the way to new modes of experiential computing, interactive environments, as well as new multimedia content. This special issue is of interest to an interdisciplinary target audience as well interdisciplinary teams of contributors spanning: applied math, multimedia experiential computing, computational science and engineering, and application domain experts. Several fundamental research problems within the scope include:

- Representations for 3D static and dynamic human data
- Representations for non-rigid 3D objects (face, body)
- Temporal modeling of 3D face/body sequences
- Machine learning techniques for 3D human representations
- Computationally efficient strategies for resource constrained deployments
- Fusing multiple cues: shape, color, texture, motion etc.

This special issue aims to bring together researchers interested in defining new and innovative solutions that advance the way 3D human data are used in multimedia computing, communications and applications such as human behavior understanding from 3D sensors, animation and entertainment, sports analytics, natural interaction, virtual and augmented reality.

Application areas of interest include, but are not limited to:

- Human behavior understanding from dynamic 3D data
- Gesture and action recognition from dynamic 3D data
- Facial expression recognition from static and dynamic 3D data
- Analysis of human (spontaneous) emotions using 3D facial expressions and body gestures
- Deep learning for 3D representations
- Benchmark datasets for static and dynamic 3D data analysis (face and body)
- Applications in tele-rehabilitation, gaming, augmented reality, retail, biometry and surveillance
- Modeling and animation of 3D humans for model based ultra low bitrate transmission
- Motion capture (MoCap) data acquisition and transmission for 3D humans
- Modeling human interaction (human-human, human-robot, human-virtual agent)

Important Dates

- Initial paper submission: June 15, 2017
- Decision notification: July 15, 2017
- Revision due: August 30, 2017
- Acceptance notification: September 15, 2017
- Camera ready version due: September 30, 2017
- Online publication: October 2017

Review process

The review process will comply with the standard review process of the ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMM) journal. Each paper will receive at least three reviews from experts in the field.

Submission instructions

Prospective authors are invited to submit their manuscripts electronically after the "open for submissions" date, adhering to the ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMM) journal guidelines (see http://tomm.acm.org/authors.cfm). Please submit your papers through the online system and be sure to select the special issue.

Manuscripts should not be published or currently submitted for publication elsewhere. Submitted manuscripts should not have been published previously, nor be under consideration for publication elsewhere. If the submission is an extended work of a previously published conference paper, please include the original work and a cover letter describing the changes that have been made. According to ACM TOMM publication policy previously published conference papers can be eligible for publication provided that at least 25% new material is included in the journal version.

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