First Call for Papers and Participation – 27 Nov 2016

IJCAI-2017 Workshop

1st International Workshop on Affective Computing (AC)

Organizing Committee

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Technical Description of Workshop

In recent years, interest in **affective computing (AC)** have led to advances in speech recognition, natural language processing, facial expression detection, and applying machine learning using wearables. The workshop will focus on the convergence of methodologies that contribute to detecting emotional and psychometric patterns based on machine learning algorithms, wearables, Internet of Things (IoT), and databases to capture important aspects of affective computing.

Active research areas that are relevant to affective computing include:

- **Applications using wearables** to detect/classify affect, stress, fatigue, and medical emergencies
- **Recognition and prediction of affect and emotion** using convolutional neural networks
- **Social informatics applications:** group behavioral effects and feedback, location-awareness
- **Predicting/classifying real-time annotated data using spatiotemporal learning and inference**
- **Machine learning using biometric data** to classify biosignals
- **Wearable computing applications**, especially based on experience sampling methods
- **Facial recognition** in predicting bonding in conversations
- **Electrothermal methodologies** in affective computing

The emphasis of this workshop shall be approaches based on the extraction of emotional and physiometric patterns from heterogeneous sources including but not limited to: wearables, spatiotemporal methods, convolutional neural networks, and other machine learning and inference algorithms.

Application areas that exhibit extant needs for affective computing include:

- **Biomedical Research:** medical informatics, behavioral and cognitive neuroscience
- **Data Science for Social Good:** computational sustainability, disaster management
- **Wearable Computing:** health applications, sensor analytics, mobile applications
- **Internet of Things (IoT) and Cyber-Physical Systems:** spatiotemporal, hybrid systems
- **Human Computer Interaction (HCI):** augmented reality/mixed reality systems, usability

- **Other Application Areas:** mobile computing, virtual reality

This workshop shall help to bring together people from these different areas and present an opportunity for researchers and practitioners to share new techniques for identifying and analyzing applications in affective computing that integrate multiple fields and disciplines. We also propose to coordinate with the wearables community to find opportunities for cross-fertilization and interdisciplinary collaboration.

Intended Audience and Impact

The intended audience shall consist of artificial intelligence researchers from core areas such as machine learning, learning representation, classical knowledge representation, plausible inference, knowledge representation, as well as transdisciplinary and multidisciplinary domains such as data science, spatiotemporal applications, cyber-physical systems (CPS) and hybrid systems including wearable computing and IoT analytics, and virtual reality (VR) / augmented reality (AR) / mixed reality systems. Benefits will thus accrue to the data science of affective computing and to advances in CPS/IoT and VR/AR.

Workshop Logistics

The workshop will be a single-day event featuring morning and afternoon technical sessions. In the spirit of fostering new research and collaboration, care will be taken to maximize available time for discussions and questions. The program committee will aim at accepting about 8-10 technical papers for full oral presentation.

Following brief welcoming remarks, a 3-hour morning session will consist of approximately half the oral technical presentations. A single invited talk following the lunch break will be aimed at serving the interests of a variety of intelligent systems researchers and attracting new researchers to the topic of heterogeneous information networks. The afternoon session will include the second half of the technical papers, concluding early with an optional poster session and a brief open discussion about possible special issues of journals on the topic. The goal of both concluding sessions is to provide additional opportunities for cross-fertilization between academic and industrial research, through introduction of applications and methodologies that may otherwise be unfamiliar to participants in diverse areas.

Relevant Past Workshops

Recent Events Related to Proposed Topic (next year and last 2 years, reverse chronological order)

ASC 2017, 13 Feb – 17 Feb
ACII 2017, 23 Oct – 26 Oct
HMII 2016, 22 Nov – 25 Nov
ERM4CT 2016, 16 Nov
ICACII 2016, 24 Mar – 25 Mar
ACM ToIT Affect and Interaction 2015, 15 Dec

Program Committee

- William Hsu, Kansas State University
- Nathan Hodas, Pacific Northwest National Labs
- Heath Yates, Biosecurity Research Institute

Others to be determined – prospects from NIPS, Social Informatics, ICWSM, and UMAP communities