ACM Journals

CALL FOR PAPERS

ACM Transactions on Multimedia Computing, Communications, and Applications

Special Issue on Deep Learning for Robust Human Body Language Understanding

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In many computer applications used in life scenarios, such as barrier-free guidance robots, smart home controllers, and human-computer interactive entertainment equipment, researchers have long been intrigued by human body language understanding. Human body language understanding is a research topic that examines data generated by human life and is targeted toward creating artificial intelligence methods or tools to enhance the user experiences of application products. Human body language data are typically transmitted through images, videos, and text, and involve various human postures, movements, gestures, faces, sounds, physiological signals, and mental emotions. These data are of particular interest for research in several cutting-edge fields, such as computer vision, natural language processing, and cross-media computing.

The initial human body language understanding research refers to some behavior classification problems, such as gesture, speech, and expression recognition, and the later research refers to regression issues, such as action localization, pose estimation, pose prediction, and expression prediction. Recently, visual generation tasks in terms of gestures, faces, and poses have attracted increasing attention in the computer vision community. The goal of this research direction is to characterize human-centric multimodal data, as well as to identify the universal traits of behavioral data from humans and identity-independent individual differences. Mainstream multimedia understanding and analysis technologies will inspire human body language research, so as to shape a healthy and intelligent society in the future.

To be specific, the representation, analysis, and generation of human behavioral data cover a wide range of research topics. There are various research directions, including 1) refinement modeling and extraction of multimodal signals in body language, 2) recognition and understanding of human body language, especially in the continuous or online sign/lip language video translation scenarios, 3) data-driven synthesis for posture, gesture, and expressions, such as music-driven dance generation, speech-driven gesture generation, and text-driven sign language posture/video generation, and 4) human-centric applications in healthcare, education, and entertainment. Human-centered intelligent applications have improved the convenience and richness of people's daily life, encouraging more and more research efforts to broaden the theoretical research and practical application of algorithmic technology in reality.

This special issue of ACM TOMM on “Deep Learning for Robust Human Body Language Understanding” aims to bring together researchers interested in defining new and innovative solutions that will advance the research of robust human language understanding and analysis. We believe the special issue will offer a timely collection of research updates to benefit the researchers and practitioners working in the broad multimedia, pattern recognition, and computing communities.

Topics

The purpose of this special issue is to solicit high-quality and original papers aiming at examining emerging

technologies related to robust human body language understanding. The topics of interest include, but are not limited to, the following:

- Subtle/Micro Face and Gesture Behavior Analysis
- Sign Language/Lip Language Recognition and Translation
- Large-scale Pre-training Model for Multimodal Representation of Human Body Language
- Data-driven Cross-modal Generative Models for Faces, Poses, and Gestures
- Adversarial Learning Mechanism for Human Behavior Generation and Rendering
- Social Applications Involving Detection, Tracking & Recognition of Face/Body Action
- Construction and Automatic Annotation of Novel Body Language Datasets
- Healthcare Applications Involving Physiological Assessment
- Barrier-free Applications Based on Intelligent Human-computer Interaction System

Important Dates

- Submissions deadline: March 15, 2024
- First-round review decisions: May 15, 2024
- Deadline for revision submissions: July 31, 2024
- Notification of final decisions: September 31, 2024
- Tentative publication: November 30, 2024

Submission Information

Prospective authors should prepare their manuscripts according to the journal's Submission Guidelines at ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMM) https://mc.manuscriptcentral.com/tomm and select the “SI: Deep Learning for Robust Human Body Language Understanding.” All the papers will be peer-reviewed following the ACM TOMM reviewing procedures. The submissions should clearly demonstrate the relationship with the topic of this SI, and the evidence of benefits to society or large communities. All submitted papers will be evaluated on the basis of relevance, significance of contribution, technical quality, scholarship, and quality of presentation, by at least three independent reviewers.

For questions and further information, please contact **Dan Guo / guodan@hfut.edu.cn.**