

Analysis of Mouth Motion for Speech Recognition and Speaker Verification

FG'15 special session organized by Ziheng Zhou, Guoying Zhao and Stefano Zafeiriou

Mouth motion constitutes a large part of our non-rigid facial motion and contains important information that allows machines to recognize speech when audio is corrupted or even inaccessible, to carry out identity verification and liveness detection at the same time, and to analyze mouth non-manuals for automatic sign language recognition. Despite the apparent motivation, the problem of mouth motion analysis is relatively under-studied. This partly is due to the multidisciplinary nature of the problem, and partly because of our limited understanding of the visual aspects of speech and mouth non-manuals.

Research into analysis of non-rigid facial motion has been gaining momentum in recent years. We have seen that for fundamental computer vision problems, for instance, face detection and facial landmark localization effective and efficient solutions now exist. Moreover, various techniques, such as nonlinear manifold learning, latent variable models and deep neural networks, have been developed for modelling high-dimensional data, providing us useful tools to tackle the problem.

This proposed special session aims to push forward the state-of-the-art of research in non-rigid analysis of mouth motion for the purpose of visual speech analysis, speaker verification, as well as analysis of mouth non-manuals in sign language. Papers included in the session are expected to take advantages of recent advances in computer vision to innovate the way we use visual information for speech recognition, speaker verification and ASLR. Possible topics of interest include but are not limited to:

- Visual-based speech recognition
- Audiovisual speech recognition
- Visual-based speaker verification
- Audio/visual fusion for speaker verification and liveness detection
- Mouth non-manuals for automatic sign language recognition

Important Date:

Paper submission deadline: November 24, 2014

Final decision and notification: January 9, 2015