Facial Expression Phoenix (FePh): An Annotated Sequenced Dataset for Facial and Emotion-Specified Expressions in Sign Language

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Abstract : Facial expressions are important parts of both gesture and sign language recognition systems. Despite the recent advances in both fields, annotated facial expression datasets in the context of sign language are still scarce resources. In this manuscript, we introduce an annotated sequenced facial expression dataset in the context of sign language, comprising over 3000 facial images extracted from the daily news and weather forecast of the public tv-station PHOENIX. Unlike the majority of currently existing facial expression datasets, FePh provides sequenced semi-blurry facial images with different head poses, orientations, and movements. In addition, in the majority of images, identities are mouthing the words, which makes the data more challenging. To annotate this dataset we consider primary, secondary, and tertiary dyads of seven basic emotions of "sad", "surprise", "fear", "angry", "neutral", "disgust", and "happy". We also considered the "None" class if the image's facial expression could not be described by any of the aforementioned emotions. Although we provide FePh as a facial expression dataset of signers in sign language, it has a wider application in gesture recognition and Human Computer Interaction (HCI) systems.
Keywords : annotated facial expression dataset, gesture recognition, sequenced facial expression dataset, sign language recognition

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