ARBEE: Automated Recognition of Bodily Expression of Emotion ID# 2018-4754





Facial landmarks detected in a vid. clip

Technology Summary

A large and growing annotated dataset with 9,876 video clips of body movements and 13,239 human characters, named BoLD (Body Language Dataset), has been created. Comprehensive statistical analysis of the dataset revealed many interesting insights. A system to model the emotional expressions based on bodily movements, named ARBEE (Automated Recognition of Bodily Expression of Emotion), has also been developed and evaluated. Our analysis shows the effectiveness of Laban Movement Analysis (LMA) features in characterizing arousal, and our experiments using LMA features further demonstrate computability of bodily expression. The dataset and findings presented in this technology serve to enable advances in body language understanding that further enable robots to interact and collaborate more effectively with humans.

Application & Market Utility

Humans are arguably innately prepared to comprehend others' emotional expressions from subtle body movements. Automatically recognizing human bodily expression in unconstrained situations, however, is daunting given the incomplete understanding of the relationship between emotional expressions and body movements. The current research, as a multidisciplinary effort among computer and information sciences, psychology, and statistics, proposes a scalable and reliable crowdsourcing approach for collecting in-the-wild perceived emotion data for computers to learn to recognize body languages of humans.

Next Steps

The research team seeks collaboration and licensing opportunities.

TECHNOLOGY READINESS LEVEL 4-7

Seeking

Licensing | Research

Keywords

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