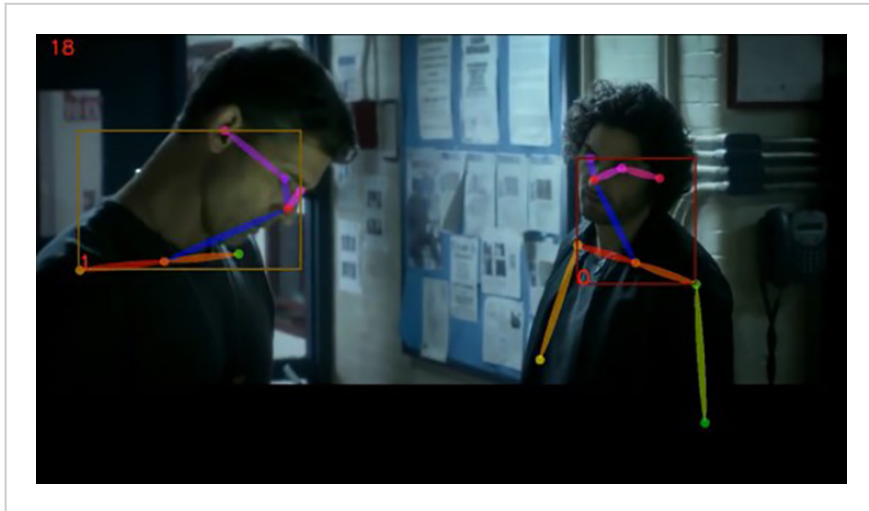


ARBEE: Automated Recognition of Bodily Expression of Emotion

ID# 2018-4754



PennState



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

Researchers

James Z. Wang

Professor, College of Information Sciences and Technology

[Online Bio](#)

Yu Luo

Graduate Student

Jianbo Ye

Graduate Student

Other Researchers

Reginald B. Adams, Jr.

Originating College

College of Information Sciences

Office of Technology Management Contact

Joseph Rokita

jjr152@psu.edu

814-863-6336



Invent Penn State is a Commonwealth-wide initiative to spur economic development, job creation, and student career success. Invent Penn State blends entrepreneurship-focused academic programs, business startup training and incubation, funding for commercialization, and university-community collaborations to facilitate the challenging process of turning research discoveries into valuable products and services that can benefit Pennsylvanians and humankind. Learn more at invent.psu.edu.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status.