

Interpreting Ambiguous Emotional Expressions

Signal Analysis and Interpretation Laboratory

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ACII 2009

Emotion Expression and its Complexities: Challenges for Automated Recognition from Speech

- **Temporal variability**
 - Emotion is manifested and perceived across varying time scales
 - Complex interplay with linguistic goals
 - **Individual variability**
 - Emotion perception varies at the individual level
 - Interlocutor interaction effects
 - **Multi-modality**
 - Emotion is expressed using speech, face, body posture, etc.
 - Fundamental limits information contained in speech
 - **Representations**
 - Emotion reporting influenced by the representation and method of evaluation
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Open Questions

- How can prototypical emotions be used to understand and interpret non-prototypical emotions?
 - How can we explicitly account for linguistic context?
 - Is it important to be able to successfully interpret all utterances of an individual in an interaction?
 - Should a user's emotion state ever be discarded?
 - How can we best make use of limited data?
 - How can ambiguous emotional content be interpreted and utilized during human-machine interaction?
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IEMOCAP-1 Data Soft Release

USC Signal Analysis and Interpretation Laboratory

<http://sail.usc.edu/emotion>

- Database overview:
 - 5 mixed-gender actor pairs (5 male, 5 female)
 - Emotion elicitation:
 - Improvisational interactions (4784 turns)
 - Scripted sessions (5255 turns)
- Benefits of the database:
 - Database simulates natural interactive patterns
 - Speech is either unconstrained or only partly constrained
 - Emotions are less stereotypical than read-sentence databases
- Modalities available:
 - Audio (two Schoeps CMIT shotgun microphones, 48 KHz)
 - Motion-capture (eight Vicon cameras, 120 Hz, 53-markers total)
 - Video (two high-resolution Sony DCR-TRV340 cameras)
- Evaluations:
 - Categorical (top classes: angry, happy, sad, neutral, frustrated, excited)
 - Dimensional (valence, activation, dominance)
- Contact:
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Goals for the Soft Release

- Engineering Research:
 - Foster collaborative work
 - Provide a resource for the comparison of data modeling techniques
- Shared Evaluations:
 - Create opportunities for detailed inter- and intra-personal evaluator modeling
 - Further develop an understanding of cross-cultural emotion perception and emotion interpretation