Human emotions can be thought of as mental reactions subjectively experienced and usually directed toward a specific object. Physiological changes in the human body accompany emotions. In the field of affective computing, empathetic machines are designed to automatically recognize and adapt to these physiological changes. One of the aims is to improve human-machine interaction in education, healthcare, or entertainment applications. However, this aim is flanked by the fundamental theoretical challenge of choosing an appropriate model of emotion.

Although emotions are inherently ambiguous, many emotion recognition systems rely on an incomplete target attribute, i.e., a target attribute that neglects ambiguity. An improper described target attribute, however, can degrade the performance of a machine learning model. Therefore, this work provides an opportunity to analyse the role of ambiguity in different aspects of an emotion recognition approach by using data mining or (unsupervised/ supervised) machine learning methods. In order to conduct an analysis, continuous self-ratings of emotion experience and physiological signals (electrocardiogram, electrodermal etc.) from 84 subjects are provided.

The following questions might arise:

- What are descriptive features in emotion recognition from physiological data?
- What is the influence of different degrees of ambiguity on subject-dependent resp. subject-independent features or emotion recognition performance?
- What are the limits to recognition of emotions with different ambiguity levels?

**Literature:**


**Contact:**

Juliane Höbel-Müller, M. Sc.
Office: G29-02, Universitätsplatz 2, 39106 Magdeburg
[Juliane.hoebel@ovgu.de](mailto:Juliane.hoebel@ovgu.de)
0391-6757446