

# Realization of wellbeing by feedback based on psychological states evaluated by objective methods

**R&D Project Title :** Wellbeing augmentation via emotion sensing from facial expressions

**Project Leader :** Wataru Sato Team Leader, Psychological Process Team, Guardian Robot Project, RIKEN

**R&D Team :** Kyoto University, RIKEN



## Summary :

Emotion is an ultimate value standard for humans. To create a happy society, science and technology that senses people's emotions and increases and decreases their pleasure and discomfort, respectively, are expected to be developed. Wearable devices that measure autonomic nervous system activity have been proposed for emotion sensing in real-life situations. However, those devices can only measure the arousal (intensity) of emotions. Previous studies have shown that facial expressions provide the information of emotional valence (quality). However, evidence is lacking whether emotional valence can be sensed from facial expressions in real-life situations. To resolve this issue, this study tries to prove that emotional valence and arousal can be sensed from facial expressions using two methods: physiological recording using a wearable device (facial electromyography and electrodermal activity) and non-contact imaging (video and thermography). We will create AI to accomplish such emotion sensing. We will also investigate the neural mechanisms underlying emotional responses to provide the theoretical foundation of emotion sensing.

