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Tracking user status and situation using wearable device

There have been a lot of studies on automatic tracking of user status and situation. It is expected to be very effective and will continue to be studied in the future. Currently, as the computing power of small devices (e.g., smartphones and smartwatches) increases, methods and devices that process information collected from sensors in real time are drawing attention. In this process, machine learning algorithms such as deep learning play a big role, and sensors have been relatively alienated. Because of the data collection and access barriers, the proportion of researchers engaged in related research is less than that of algorithms. This study discusses how to classify the status and situation by collecting sensor information in various situations. This study aims to contribute to the creation of an academic atmosphere, by introducing 1) a case study in which the situations on the road and the mental states of the driver are inferred from the bio-signals, and 2) a case study that classifies the user's tasks using the smartphone in the pocket. This study reviews issues arising from bio-signal acquisition and analysis and reaffirm the direction of future studies. The results of this study are expected to be helpful for the research and development of bio-trackers.

Recent Publications

1. Kim H K, Park J, Choi Y and Choe M (2018) Virtual reality sickness
2. Kim H K, Han S H, Park J and Park J (2016) The interaction experiences of visually impaired people with assistive technology: A case study of smartphones. *International Journal of Industrial Ergonomics* 55:22-33.
3. Kim H K, Han S H, Park J and Park J (2016) Identifying affect elements based on a conceptual model of affect: A case study on a smartphone. *International Journal of Industrial Ergonomics* 53:193-204.
4. Park J, Han S H, Kim H K, Moon H and Park J (2015) Developing and verifying a questionnaire for evaluating user value of a mobile device. *Human Factors and Ergonomics in Manufacturing & Service Industries* 25(6):724-739.
5. Kim H K, Han S H, Park J and Park W (2015) How user experience changes over time: A case study of social network service. *Human Factors and Ergonomics in Manufacturing & Service Industries* 25(6):659-673.

Biography

Jaehyun Park is an Assistant Professor in the Department of Industrial and Management Engineering at Incheon National University (INU). He received BS degree and PhD degree in Industrial and Management Engineering from POSTECH (Pohang University of Science and Technology). His research interests are semantic network analysis, machine/deep learning on physical behavior and computational cognitive engineering.

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