World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:12, No:09, 2018

An Exploratory Research of Human Character Analysis Based on Smart Watch Data: Distinguish the Drinking State from Normal State

Authors : Lu Zhao, Yanrong Kang, Lili Guo, Yuan Long, Guidong Xing

Abstract : Smart watches, as a handy device with rich functionality, has become one of the most popular wearable devices all over the world. Among the various function, the most basic is health monitoring. The monitoring data can be provided as an effective evidence or a clue for the detection of crime cases. For instance, the step counting data can help to determine whether the watch wearer was quiet or moving during the given time period. There is, however, still quite few research on the analysis of human character based on these data. The purpose of this research is to analyze the health monitoring data to distinguish the drinking state from normal state. The analysis result may play a role in cases involving drinking, such as drunk driving. The experiment mainly focused on finding the figures of smart watch health monitoring data that change with drinking and figuring up the change scope. The chosen subjects are mostly in their 20s, each of whom had been wearing the same smart watch for a week. Each subject drank for several times during the week, and noted down the begin and end time point of the drinking. The researcher, then, extracted and analyzed the health monitoring data from the watch. According to the descriptive statistics analysis, it can be found that the heart rate change when drinking. The average heart rate is about 10% higher than normal, the coefficient of variation is less than about 30% of the normal state. Though more research is needed to be carried out, this experiment and analysis provide a thought of the application of the data from smart watches.

Keywords : character analysis, descriptive statistics analysis, drink state, heart rate, smart watch
Conference Title : ICDFJS 2018 : International Conference on Digital Forensics and Justice System
Conference Location : Tokyo, Japan
Conference Dates : September 10-11, 2018