Wearable Passive biosensing interface method for gathering bioinformation

Tae-Gyu LEE *

* Smart Contents Major, Division of ICT Convergence, Pyeongtaek University, 3825 Sedong-daero Pyeongtaek-si, Gyeonggi,17869, Korea
tglee@ptu.ac.kr

Abstract—Recently, a variety of biometric information systems have been tried and developed to provide IoT-based healthcare and medical information services. Existing biometric information systems actively collect and analyze biometric information around user terminals or smart devices. On the contrary, this study proposes a passive biosensing system and a passive sensing method for collecting and analyzing biometric information using wearable passive patches. In particular, a passive sensing system and method using a passive patch that can be detected by activation of an external power source without an internal battery is proposed. This paper focuses on the following elements of passive biometric information system. The first describes the structure and components of a passive patch system that can be operated from an external source without an internal battery. The second describes passive biometric information algorithms that passively detect biometric information in real time. Finally, we propose a passive sensing analysis modeling that analyzes and evaluates the signal sensitivity of biometric information, and describes an analysis example of bioinformation sensitivity.

Keyword—Passive sensing, Patch interface, IoT, Wearable system, Bioinformation

Tae-Gyu Lee (BSc’92-MSc’96-PhD’06) received the B.Sc. degree from Kunsan National University, Kunsan, Korea in 1992, the M.Sc. degree from Soongsil University, Seoul, Korea in 1996, and the Ph.D. degree from Korea University in 2006. He is currently a Professor in the Smart Contents Major, Division of ICT Convergence, Pyeongtaek University, Gyeonggi, Korea since 2018. He has been a Professor in the Support center for Field Practice Education, Wonkwang University, Jeonbuk, Korea for 2014-2018. He has been a Professional Researcher in Advanced Convergent Technology R&D Group, Korea Institute of Industrial Technology (KITECH), Ansan, Korea for 2009-2013. He has also been a President in the JIGUNET Corporation, Seoul, Korea, from 1999. His research interests are in distributed systems, ubiquitous computing, middleware, networks, bioinformatics, wearable and robot computing. Prof. Lee is currently a lifetime member of Korea Information Processing Society, IEEE ICACT reviewer, IEEE TPDS reviewer.