conferenceseries.com

8ᵗʰ World Medical Nanotechnology Congress & Expo

June 08-09, 2016   Dallas, USA

Security in pervasive healthcare systems

Mary Mehrnoosh Eshaghian-Wilner, Nikila Goli, Aman Gupta, Kumar Reddy, Chinta Sudeer and **T Soren Craig**
University of Southern California, USA

Current healthcare and wellness monitoring devices make medical follow-up convenient. A Secure Body Unit (SBU) such as a wearable computing device allows for autonomous collection of a patient's physiological data, such as glucose levels and blood pressure. This data can be sent to the patient's smartphone and then to a physician for review. This process relies extensively on network connectivity, and yet current healthcare IT endeavors do not pay enough attention to protecting this highly-sensitive physiological data. Therefore, we propose a generic infrastructure that can be used by health technologies to enhance data security. A patient's smartphone can use the industry-standard RSA protocol to safely exchange a secure key with the SBU. The health device can then use this key along with the AES algorithm to encrypt its data before transmitting it to the smartphone. The smartphone is then able to decrypt the health data with its copy of the secure key. This data is converted into a readable health report which is sent to the Physician Interface System (PIS), a generic web-based system maintained by a health provider that houses patient medical records. This transmission can occur over the 'https' protocol, which is widely deployed and considered secure. Overall, this architecture is a noninvasive method of physiological data protection and can be applied to any generic health technology infrastructure. It utilizes reliable protocols like https, RSA, and AES over more complex alternatives. As the proliferation of smart devices continues, this generally applicable method of data protection is an imperative.

Biography

Mary Mehrnoosh Eshaghian-Wilner is an interdisciplinary scientist and patent attorney. She is currently a Professor of Engineering Practice at the Electrical Engineering Department of USC. She is best known for her work in the areas of Optical Computing, Heterogeneous Computing, and Nanocomputing. Her current research involves the applications and implications of these and other emerging technologies in medicine and law. She has founded and/or chaired numerous IEEE conferences and organizations, and serves on the Editorial Board of several journals. She is the recipient of several prestigious awards, and has authored and/or edited hundreds of publications, including 3 books.

eshaghia@usc.edu

Notes:

J Nanomed Nanotechnol
ISSN:2157-7439 JNMNT an open access journal

Medical Nanotechnology 2016
June 08-09, 2016

Volume 7, Issue 3 (Suppl)

Page 46