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ІНТЕРНЕТ РЕЧЕЙ ТА Е-ЗДОРОВ'Я: ШЛЯХ ДО ЕКСПОНЕНЦІАЛЬНОЇ МЕДИЦИНИ

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IOT AND E-HEALTH: A WAY TO EXPONENTIAL MEDICINE

One of the major trends in the IT area at the beginning of the 21st century is the Internet of Things (IoT): the variety of physical objects embedded with electronics and sensors, software and network connectivity, which enables these objects to collect and exchange data. Surprisingly this trend is related not only to technical specifics, but also has a direct relationship to a person. This becomes obvious if we take into account the rapid development of a direction called "smart clothes". The "smart clothes", i.e. garments empowered by IT, is currently industry booming hit. These new wearable sensors do not burden people like handheld devices or implants and they can track different medical and performance measurements syncing wirelessly with a smartphone. The massive usage of these truly revolutionary garments in peoples' everyday life will change the way the modern medicine is practiced and almost certainly will improve e-healthcare outcomes.

Thus the healthcare industry is now on the cusp of disruptive changes and the new technologies are being developed will truly alter the way how the medical care is provided to the patients. The medicine in the 21st century will be functioning in the framework of a fundamentally new P3 paradigm: predictive, preventive and personalized medicine (PPPM). Which means that the healthcare will became proactive but not reactive. From the other side as medical sensors become ubiquitous, the streams of bio-data available to clinicians will completely overwhelm their ability to understand this amount of information and react in real time. To deal with this "ocean of bio-signals" (Big Data), we need to teach computers to do the work of a dedicated clinical doctor, with the purpose of automatic monitoring each patient's data continuously to detect the subtle signs of an impending problem. Thereby the task of automatic personal health monitoring in order to make preclinical diagnosis on the "Zero" stage of the pathological process is becoming more and more relevant.

The paper deals with the creation of such analytical platform that can automatically examine medical data continuously (namely concerning heart wellness and cardiovascular diseases prevention and prediction) and is based on the ubiquitous convergence of mobile applications, new intelligent gadgets and machine learning methods. The authors are confident that described personalized automatic healthcare monitoring and pathologies detection systems will help to make platforms for more effective treatments tailored to a person that is considered as the "medicine of the future".

References
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