

Application of Dr.M, An Integrated Mobile Healthcare Strategy, for Treatment of Cardiovascular Disease

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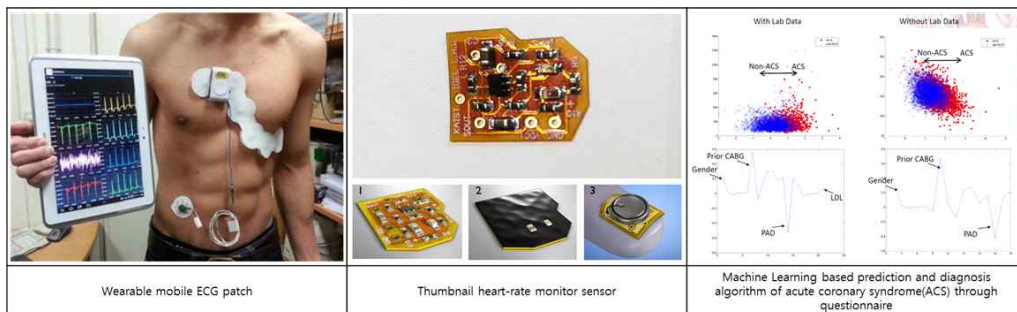
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KAIST Dr. M is an innovative "Smart Mobile Healthcare System" which collects and syntagmatically analyzes the user's various bio-signals and provides the customized health enhancement service to customers in real-time. To put this system to practical use, numerous new technologies, such as bio-sensor technology, low-power communication technology, the Internet of Things technology, big data technology, and disease analysis and prediction technology, need to be developed. To comprehensively develop various technologies like these, KAIST is promoting "Dr. M" project and, in this regard, recently a large-scaled research test bed is constructed in purpose of testing/evaluating the developed technologies by linking organically. Over 30 professor at KAIST participated this project after conducting collaborative research with domestic businesses and medical institutions.

Among these, the following technologies for diagnosing and managing cardiovascular disease has been developed: 'wearable mobile ECG patch', 'secure sensing and network for sudden cardiac death (SCD)', 'prediction and diagnosis algorithm of acute coronary syndrome (ACS) through questionnaire', and 'thumbnail heart-rate monitor sensor.'



For utilization of testbed, we have distributed 6 types of smart watch/band to 350 members in KAIST from March 2016, collecting the personal health record (heart rate, activity, body temperature when possible), and their GPS information. The measured data is transmitted to their own smartphone's application, and then transmitted to the Dr.M server platform for storage and further processing and analysis. Data collection will be continued for two years. We also extended our large-scaled research to more than 100 elderly people living in Senior Towns (Samsung Noble County, the Classic 500).

Based on the developed technologies and measured various bio-signals through the Dr.M testbed, we will build a service models for the diagnosis and prevent of cardiovascular disease as well as personal healthcare systems and services