

Middleware Solutions for Emerging Healthcare Technologies

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Abstract

Healthcare technologies having been going through changes in recent years and many significant evolutions have been forecast with the imminent development of Internet of Things (IoT) systems. Traditionally Healthcare was focused on acute conditions and monitoring of patient vital signs was carried out in clinical environments. However, the availability of sophisticated mobile technologies, wearable sensors, high-speed, ubiquitous networks, large data storage facilities, and big data processing algorithms all suggest that in the future patient observation and analysis will be carried out over many contexts. More data should imply more knowledge and thus better care and medical decisions, and thus a greater level of service. However, for this future to be successful the quality of the service must be high. A significant factor to ensure this will be the quality of Middleware systems that facilitate the connectivity and interoperability across the various devices and applications. This is a task of Software Engineering which enables frameworks such as description languages and modelling methods that assist in making quantifying or qualifying assessments of various system features. These include the Requirements, the Architectural design, and Context-awareness. A number of potential paths for future investigation exist, but all should feedback results to return an increase in service quality.