Review

Submited for the Academic Degree of Master of Engineering

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“IoT in medical informatics and Telemedicine with approach to design patient alarm and EHRs “

The purpose of the project is to design software which holds all information about patients such as patient health history, patient diagnosis results, patient prescription, patient examination results and other task related to patient health and design intelligent patient alarm device which get alarm from patient monitor and take necessary data from image and send it directly to doctor and nurse to perform another task.

Automed medical software has several main parts: admin panel: panel of system admin who can manage and monitor all system resources. nurse panel: panel of nurse with some privileges to do some task related to patient. doctor panel: panel of doctor which higher privileges to and patient diagnosis and etc. doctor mobile app: doctor can see his/her patient and appointments while not access to medical system. alarm device: physical part of project to take photo from patient monitor and retrieve data from image and send to doctor in case of alarm. alarm device server: server part of project which communicate with alarm device.

Automed medical system mainly written in java programming language, its consist of

MySQL and oracle RDBMS to keep and store software data. Software use several frameworks such as spring mvc, spring security, java activation framework, java media framework, java ORM framework, hibernate frameworks for communicating with databases. Also, its use some API such as java mail API, Gmail API to send and receive email. Nextmo API for sending sms and two factor authentications. Barcode API for generate QR-code and barcode for patient prescription and patient diagnosis result, user interface of software built with several scripting languages such has java script and user several libraries like: bootstrap, ajax and etc. system use web service to communicate between user interface and server. Hardware side of project built with raspberry pi which is microcomputer consist of AT mega 512 microcontroller with network connection possibility. for image part of alarm device system use 8MP IR camera to take picture from patient monitor in any level of room brightness. Software use text to speech and speech to text method to store information instead of typing by keyboard.

I think that this software will help the doctors in their every day work and especially whom who works in intensive care unit and Saed Tavana deserves master's degree in Biomedical Engineering.

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