

Context Management in Health Care Apps

Albert PLA^{1a}, Beatriz LÓPEZ^a, Jordi COLL^a,
Natalia MORDVANIUK^a and Abel LÓPEZ-BERMEJO^b

^a*University of Girona, Girona, Spain*

^b*Girona Biomedical Research Institute, Girona, Spain*

Keywords. Context-reasoning, Health care apps, Decision support systems

Introduction

Monitoring health care mobile apps are useful to inform physicians regarding patients' status whilst providing recommendations to patients. Such recommendations are based on smart components (decision support system) that can take advantage of the mobile device to improve their outcome thanks to the management of contextual information

1. Methods

Three main types of context data should be considered: sensors-related, geo-temporal, and environmental. Contextual information can improve reasoning processes of health care apps by determining the relevance of the attributes considered; by selecting the kind of reasoning model to be followed; and, finally, to retrieve clinical histories of similar patients in similar environmental contexts.

2. Results

The methodology described in the previous section has been applied in a smart e-Health app for remote patient monitoring. Particularly, the application is intended for assisting parents in charge of premature babies through and smartphone application and a set of sensors. In such scenario, the application used sensor-related and environmental context information in order to improve the system outputs and to evaluate the quality of the data gathered.

3. Discussion

In order to improve the reasoning modules of health care mobile applications, context should be modelled according to three different dimensions: sensor, geo-temporal, and environmental data. This modeling has been illustrated in the development of a monitoring application for premature babies with positive results.

¹ Corresponding Author: Albert Pla, e-mail: albert.pla@udg.edu