Smart Health Research Group

LINES OF ACTIVITY

The adoption of information and communication technologies (ICT) within the healthcare sector led to the concept of 'electronic health' (e-health). e-Health is a wide concept that comprises many research topics from the development of medical devices to the management of electronic health records. In the SMART HEALTH research group we apply ICT to address problems related to the health of people, both from a patient perspective and from a medical and institutional point of view.

Following the consolidation of e-health, the generalized use of mobile devices with positioning capabilities opened the door to mobile health (m-health), which could be understood as the delivery of healthcare services via mobile communication devices.

Environments with sensing capabilities like Smart Cities, smart buildings and homes, pave the way for the adoption of the concept of 'SMART HEALTH' (s-health): a new health paradigm based on ICT that uses the contextual information of smart environments to provide advanced healthcare services, to improve patient¿s quality of life and to optimize costs and resources

APPLICATION AREAS

- Software solutions and computer systems in the areas of electronic, mobile and smart health.
- New trends in technology applied to healthcare (mobile apps, wearables, smart sensing, etc.)
- Healthcare and health services in the context of Smart Cities.
- Assisting healthcare professionals to achieve their goals and improve their tasks by means of applying information and communication technologies.
- Creating new services and fields of application of software and hardware in order to strengthen the relationship between patients and health service providers.

MORE INFORMATION

The research group in Smart Health has elaborated on the new concept of smart health that was first described by Solanas et al. in the article Smart health: A context-aware health paradigm within smart cities. IEEE Communications Magazine 52(8): 74-81 (2014). The people in the group have been involved in several research and transference projects related to security, privacy, mobility, monitoring, mobile applications, etc.

They have designed, built and tested an intelligent system for private monitoring of patients with Mild Cognitive Impairments, under the SIMPATIC RecerCaixa project, funded by Obra Social La Caixa. This system is one step beyond typical monitoring systems, since it addresses the detection of wandering situations and studies the patterns in patients¿ daily activities.

Together with nursing professionals, and collaborating with hospitals, they have addressed the automatic assessment of pain and discomfort in neonatal intensive care units. Regarding sport and healthy habits, they have implemented a recommender system for healthy routes.

They have also taken part in the SUAC3I European project on access to critical infrastructures by means of biometry and in the CRYPTACUS COST action on data protection.

EQUIPMENT

- Smartphones
- Servers
- Tablet
- Wearables

GROUP DETAILS

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