# Edge computing for the implementing of Early Warning Scored systems in health based on open and low cost hardware

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## Abstract (300 word limit)

The development of Information and Communication Technologies (ICT) and the emergence of new platforms and services, can allow the development of new products and solutions and home health care and patient monitoring. These new platforms, combined with the new computing and computational intelligence capabilities, result in systems that have the capacity to estimate, monitor and control treatments, patients, controls and health care processes, in a ubiquitous manner and with permeate records. Currently, with the implementation of the new computing paradigms, such as fog and edge computing; Medicine and health are expected to obtain a great benefit derived from the development of mobile, portable and connected devices, which can acquire and communicate data on symptoms, vital signs, medications and activities of daily life, which can contribute or affect people and treatments.

Despite the possible benefits of health services assisted by platforms such as IoT, IoMT, eh-health, telemedicine, among others; There are still barriers such as the storage of data in the cloud for subsequent analysis by doctors, the security and privacy of the data that is communicated, the cost of communicating the data that is collected and the handling and maintenance of data. Sensors.

This work implements and develops the context of the IoT platforms based on fog and edge computing, in the field of health and medicine through the transformation of computing, as intermediate layers that interface interfaces between heterogeneous networks, legacy infrastructure networks and servers in the cloud for ease of data analysis and connectivity. To implement structural health monitoring based on open hardware, low cost of implementation and efficient energy consumption, for the application of Early Warning Score (EWS) that allows the verification of the concept of structural health monitoring systems in IoT with improved intelligence of the system, energy efficiency, mobility, performance, interoperability, security, availability, reliability and ubiquity.

## Image

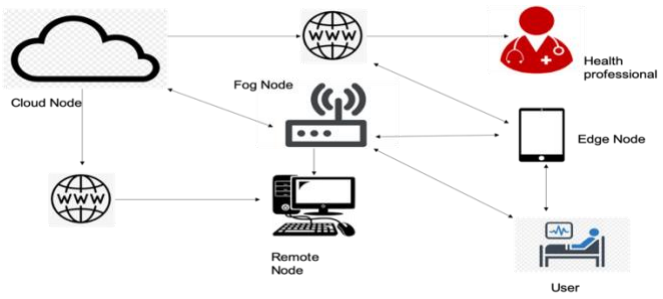



Figure 1: Early Warning Scored (EWS) model.

## Recent Publications (minimum 5)

1. GABRIEL ALBERTO PUERTA APONTE. Internet of Things Applied in Healthcare Based on Open Hardware with Low-Energy Consumption. Healthcare Informatics Research, 25(3), 230-235. 2019
2. GABRIEL ALBERTO PUERTA APONTE. Internet of things in healthcare monitoring to enhance acquisition performance of respiratory disorder sensors. International Journal of Distributed Sensor Networks, 15(5), 1550147719847127. 2019.
3. GABRIEL ALBERTO PUERTA APONTE. Analysis of Colombia's telemedicine development, the post conflict potential opportunity. Telemedicine and e-Health, 2019.
4. GABRIEL ALBERTO PUERTA APONTE, "INTERNET OF THINGS APPLICATION FOR CARDIAC AND RESPIRATORY MONITORING PATIENTS" Avances Recientes en la Electrónica y Tecnologías de Avanzada . En: Colombia ISBN: 978-958-56670-3-7 ed: Centro De Produccion De Medios Y Publicaciones Universidad De Pamplona , v. , p.p25 - p25 ,2018
5. GABRIEL ALBERTO PUERTA APONTE, "Routing Medical Images with Tabu Search and Simulated Annealing: A Study on Quality of Service" En: . 2019. International Journal of Computer, Electrical, Automation, Control and Information Engineering. ISSN: 1307-6892 p.114 - 126 v.13
6. GABRIEL ALBERTO PUERTA APONTE, "Performance Analysis of Search Medical Imaging Service on Cloud Storage Using Decision Trees" En: . 2019. International Journal of Computer, Electrical, Automation, Control and Information Engineering. ISSN: 1307-6892 p.127 - 142 v.13



Biography (150 word limit)

PhD student in Applied Sciences, Master of Science in Information and Communications, Electronics professional with knowledge in development of computer security management systems, electronic security, detection and telecommunications systems. Field experience, supervision and project supervision, maintenance management, research and teaching.

Excellent interpersonal relationships, with great capacity to assume responsibilities, teamwork, supported by human talent and the necessary technological infrastructure. With absolute adaptability and continuous improvement, with a great sense of belonging and driving safety of the information.

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## Notes/Comments: