Diploma Project
Academic Year 2023/2024

Project code: 202302

Project Title (English):

Smart E_health System Based on Artificial Internet of Things (AIoT)

Project Title (Arabic):

نظام الـصحة الإلـكترونـية الـذكي الـقائم على الإنـترنـت الاصطنـاعي لـلأشيـاء (**AIoT**)

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Project Objectives:
Nowadays, E-health and healthcare applications in internet of things are growing rapidly. E-health applications are starting from remote monitoring of patient's parameters in home to monitoring patients during his life activities at work, in car, transportation…etc. So we can monitor patients at any place outside of hospitals and clinical settings. By using this technology, we can save life and reduce number of emergency visits of hospitals.

In this project, AIoT remote patient and e-Health monitoring system was design for monitoring physiological medical signals of patients. These medical signals can be include parameters like heart rate signals, patient temperature, etc.

The proposed AIoT e-health platform system consists of four main components; AI Model, client nodes (patient or doctor), broker server and multi-topic messaging protocol. Design and implementation of patient monitoring node based on microcontroller with real medical sensors was proposed in this project.

Project Outcomes:
The proposed hardware and software for this system design be implemented as a prototype wearable device with low cost and low power consummation.

Design and implementation of Patient Monitoring over AIoT for multiple vital physiological parameters over AIoT.

Project Requirements:

- Hardware: Some medical sensors, NodeMcu,
- IoT platform, Deep Learning, and Keras & Tensorflow basics