UNIVERSITY OF SOUTH FLORIDA

Defense of a Master's Thesis

An Internet of Medical Things (IoMT) Approach for Remote Assessment of Head and Neck Cancer Patients
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Internet-of-Medical-Things (IoMT) allows for a smart healthcare system to remotely monitor and assess patient's progress at home. Head and neck cancers (HNC) are treated with various treatment options which are associated with significant side effects, mainly shoulder dysfunction, and trismus (spasm of jaw muscles). However, measurement of patient's progress, and side effects while undergoing treatment, is limited to evaluation received based on scheduled appointments. Development of strategies to enhance monitoring during follow-up period is needed for earlier identification of problems such as trismus and shoulder dysfunction. In this interdisciplinary research, for the first time, we develop an IoMT enabling application, namely, Automated Measurement of Trismus and Shoulder Disfunction (AMTSD), to remotely monitor the recovery. An HNC patient can use AMTSD as a web application frequently (twice/daily) to virtually measure the mouth extension and shoulder range of motion (ROM). The data collected is stored in a database and can be automatically analyzed to assess the progress. Triggers can be set to alert the healthcare