

ABSTRACT

Proper sleep is necessary lack of which brings stress and trauma. There are a lot of reasons that cause it, and we are going to measure how their sleep is so that they can prevent such things. We will measure using an IoT device and analyze using Machine learning. The IoT device includes sensors, an accelerometer, a pulse oximeter, and a microphone amplifier—integrated with an ESP32 microcontroller. The ADXL345 accelerometer captures precise body movement, while the MAX30102 pulse oximeter monitors heartbeat and SPO2 levels. The MAX9814 microphone amplifier facilitates snoring detection, which is held by a person during sleep later the data is backed up to the AWS cloud platform where we are going to implement some algorithms like renal neural network (RNN) with some hyper tuning in regularization, learning rate, and architecture which helps in making the accuracy of the prediction higher which enables the person to track and detect the what kind of sleep he was having and what was lacking which helps in making his sleep better day by day.