Paper Summary

Paper-1:

Name	An IoT Enabled Health Monitoring Kit Using Non-Invasive Health Parameters.
Authors	Arpita Das, Shimul Dey Katha, Muhammad Sheikh Sadi and Ferdib-Al-Islam.
Summary	A health monitoring device which is made up using Raspberry Pi, cloud IoT platform (ThingSpeak server), temperature sensor (LM35), Pulse/heartbeat sensor, ECG sensor (AD8232), accelerometer sensor (ADXSL345), oxygen level measurement sensor (SPO2), GSR sensor (which is used to measure the variations in electrical characteristics of the skin for the instance caused by variation of human body sweating) was proposed in this paper. The sensors measure the health parameters and the data is sent to the system controller raspberry pi which in turn stores the data on ThingSpeak server. Arduino is used instead of ADC and is connected to R-PI to send sensors' data. ThingSpeak server visualizes the data. The body temperature, heartbeat, ECG of the heart, blood oxygen level, motion, GSR value of the patient were monitored and the parameters gotten by sensors were compared to the actual biomedical parameters of the users. The average accuracy of the temperature sensor is 96.67%, the average accuracy of the heartbeat sensor is 96.77% and other parameters were also similar in accuracy. So, the device was efficient.

Paper-2:

Name	Improving Human Activity Recognition using ML and Wearable Sensors Improving Human Activity Recognition using ML and Wearable Sensors Improving Human Activity Recognition using ML and Wearable Sensors.
Authors	Gael S. Mubibya, Jalal Almhana.
Summary	The research paper proposes the study of human activity recognition using sensors such as accelerometers (ACC), gyroscope (GYR), magnetometer (MAG) and their location on the performance of MLA (Machine Learning Algorithm). PAMPAP2 dataset was used from which unnecessary sensors' data were eliminated to make it more efficient and 16 features were extracted from the processed dataset. For MLA such as LDA (Linear Discriminant Analysis) and QLA (Quadratic Discriminant Analysis) it generates a linear and quadratic decision surface. They were simple and gave decent, interpretable, robust results. KNN (K- Nearest Neighbor) is commonly used in related works. It requires a lot of testing time. Decision Tree (DT) require little data preparation and training time and provides good prediction accuracy. Random Forest (RF) gives more accurate prediction than DT but requires more training time. DT and RF provides best performance in term of success rate but costly in terms of execution time.

Paper-3:

Name	Real-time RFID based item tracking using IoT & efficient inventory management using Machine Learning.
Authors	Ayakanta Mishra, Manaswini Mohapatro.
Summary	The research paper proposes an IoT- cloud architecture for RFID tag based real time Stock Keeping Unit. Two RFID scanners placed at entry and exits scans items' arrival and leaving time. Various parameters are extracted from the readers and RFID tags. The data is classified into ABC classification by ML classification models. Each SKU is classified by SAW MCMD technique and grouped into ABC. This is based on Pareto's 80/20 law which states 20% of inventors account for 80% of total cost. 3 MLA are used for testing and training ML models. Their accuracy: SVM = 84.8%, KNN = 83 6%, Bayes = 74%