**Project Design Phase-I**
**Solution Architecture**

| Date | 06 May 2023 |
|------|-------------|
| Team ID | NM2023TMID19353 |
| Project Name | |
| | Project Title : Intelligent Garbage Classifcation using Deep learning |

## Solution Architecture of intelligant garbageclassification using deep learning :

Waste management leads to the demolition of waste conducted by recycling and landfilling. Deep learning and the Internet of things (IoT) confer an agile solution in classification and real-time data monitoring, respectively. This paper reflects a capable architecture of the waste management system based on deep learning and IoT. The proposed model renders an astute way to sort digestible and indigestible waste using a convolutional neural network (CNN), a popular deep learning paradigm. The scheme also introduces an architectural design of a smart trash bin that utilizes a microcontroller with multiple sensors. The proposed method employs IoT and Bluetooth connectivity for data monitoring. IoT enables control of real-time data from anywhere while Bluetooth aids short-range data monitoring through an android application. To examine the efficacy of the developed model, the accuracy of waste label classification, sensors data estimation, and system usability scale (SUS) are enumerated and interpreted. The classification accuracy of the proposed architecture based on the CNN model is 95.3125%, and the SUS score is 86%. However, this smart system will be adjustable to household activities with real-time waste monitoring.

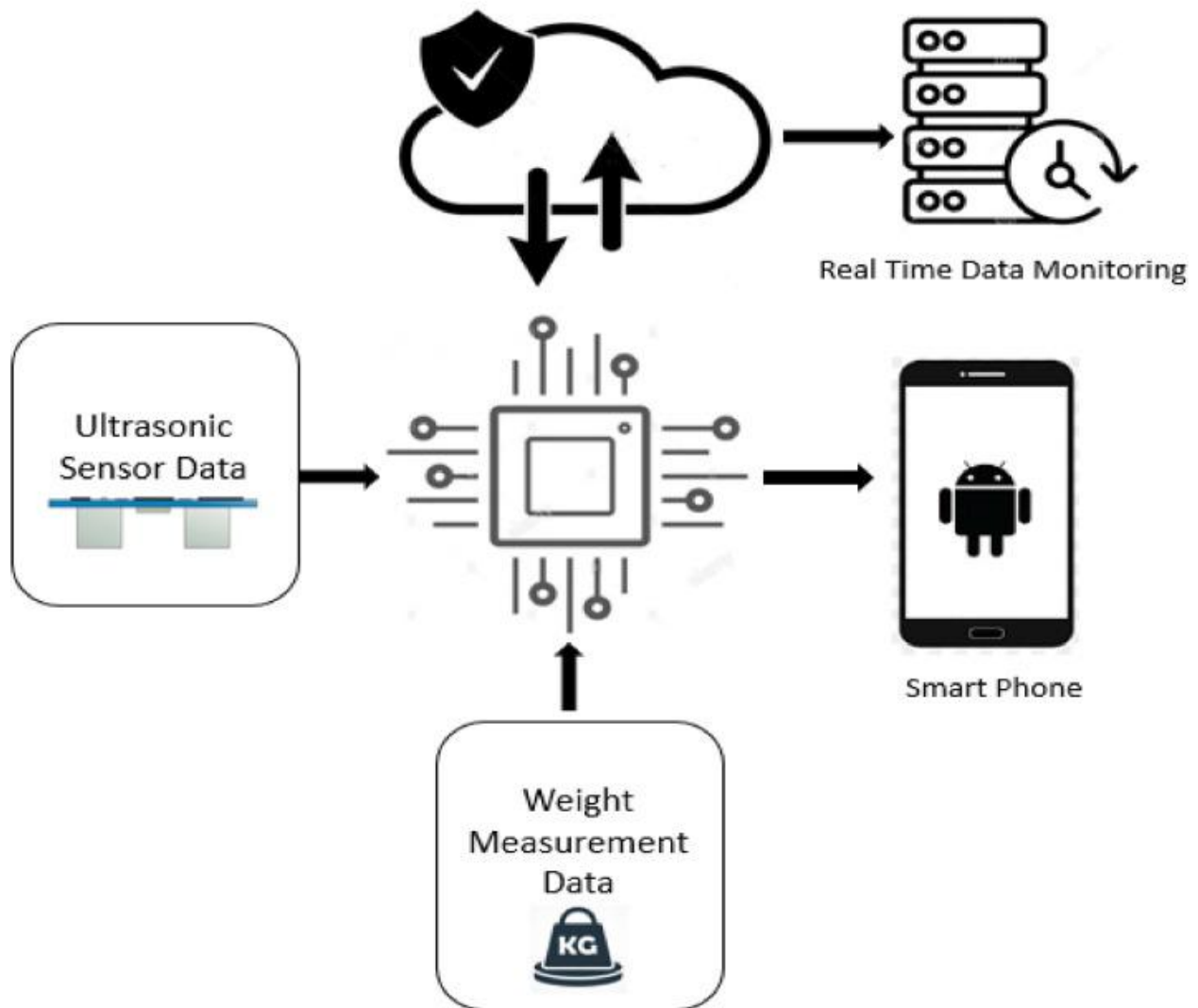## Example - Solution Architecture of intelligant garbageclassification using deep learning diagram:

*Figure 1: Architecture and data flow of the voice patient diary sample application*

**Reference:** https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/