

HRI 2019 Workshop – Human-Care Service Robot

Data Acquisition System at the Living Labs For Elderly Care Robot

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Dongjin Shin

1. Introduction

- ▶ As the elderly population increases, the demand for health care of the elderly is increasing.
- ▶ But the robot service for the elderly is still insufficient.
- ▶ It is difficult for us to know exactly the actual life pattern and demand of the elderly .

→ *to develop health care service,*

*we need to **observe the real life of the elderly***

collect the real data such as life patterns and bio-signals.



2. Living Labs

- ▶ In order to understand the elderly and develop the health care service, we operated living labs and collected long-term data.



Door



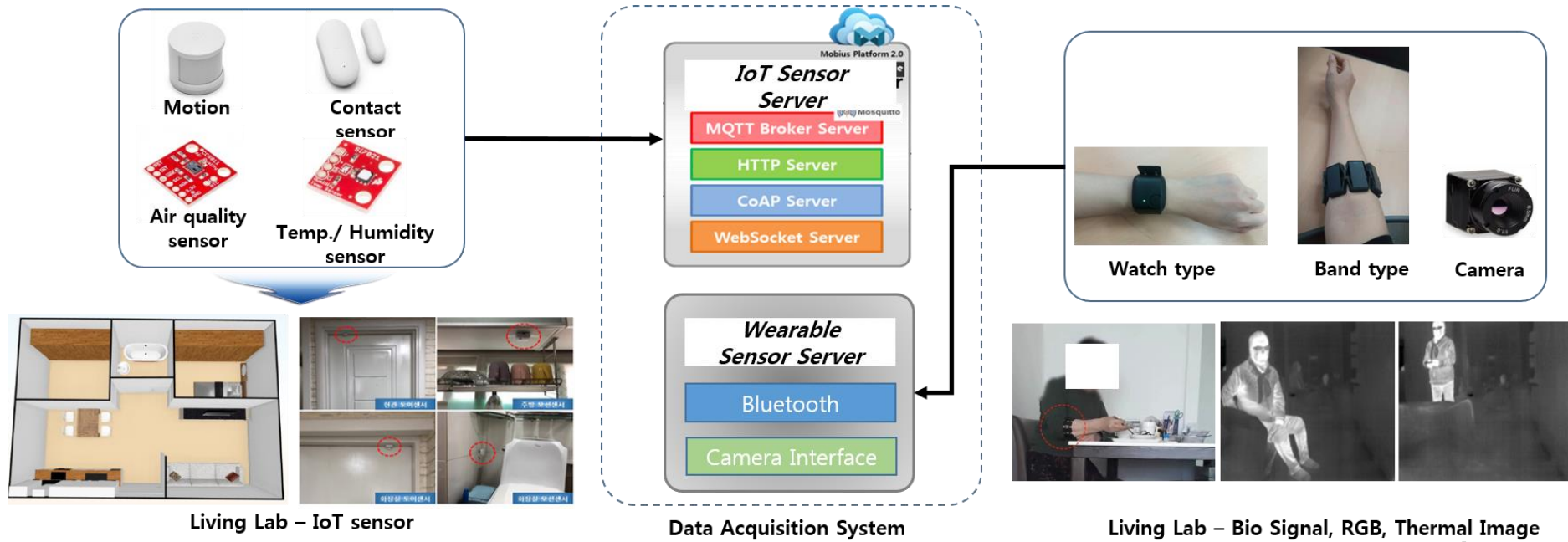
Restroom



Kitchen

3. Data Acquisition System

- ▶ Data acquisition system consists of an IoT sensor server and a wearable sensor server
- IoT sensor server collects life patterns and environment information
- Wearable sensor sever collects bio signals(EMG, EDA, SKT, PPG) and camera data for annotating elderly behaviors.



4. Application and Future Work

► Applications

- Using the IoT sensor data, we can estimate the daily life patterns such as kitchen, going out activities.
- Using the bio signal data, we can recognize the actions of the elderly.
Ex) touching smart phone, wearing glasses

► Future work

we will develop a service that detects health abnormality using the biometric data and life patterns.