AIoT Coding, Engineering and Entrepreneurial Skills Education for Gifted Students

AIoT Bedroom

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Aim

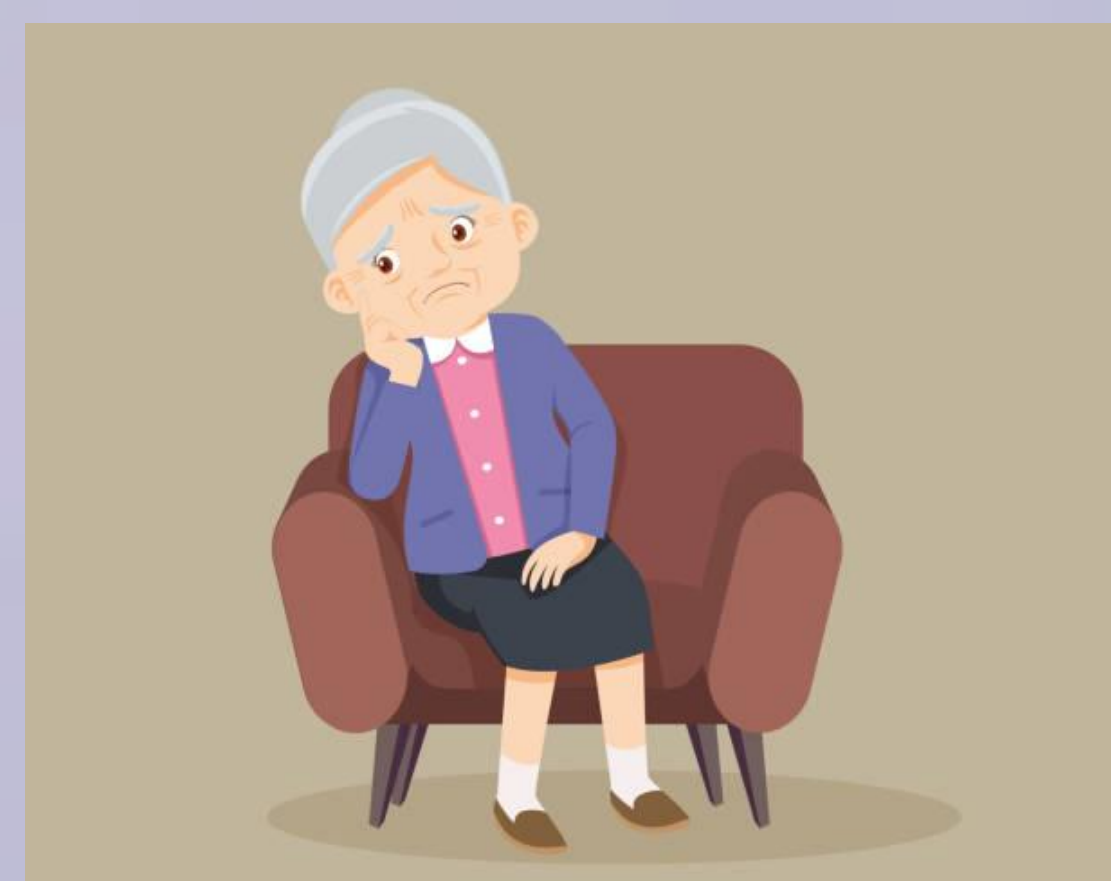**AI and IoT** technology to improve Elderly's life by enhancing bedroom environment

Objective

- **Cozy** bedroom
- **Wipe out the threads** for Elderly
- **Reduce labour cost** for elderly care

Background & Motivation

- **Sudden Death** in sleep
- **Imperfect** of sleeping environment
- **Lack of labour** for elderly care
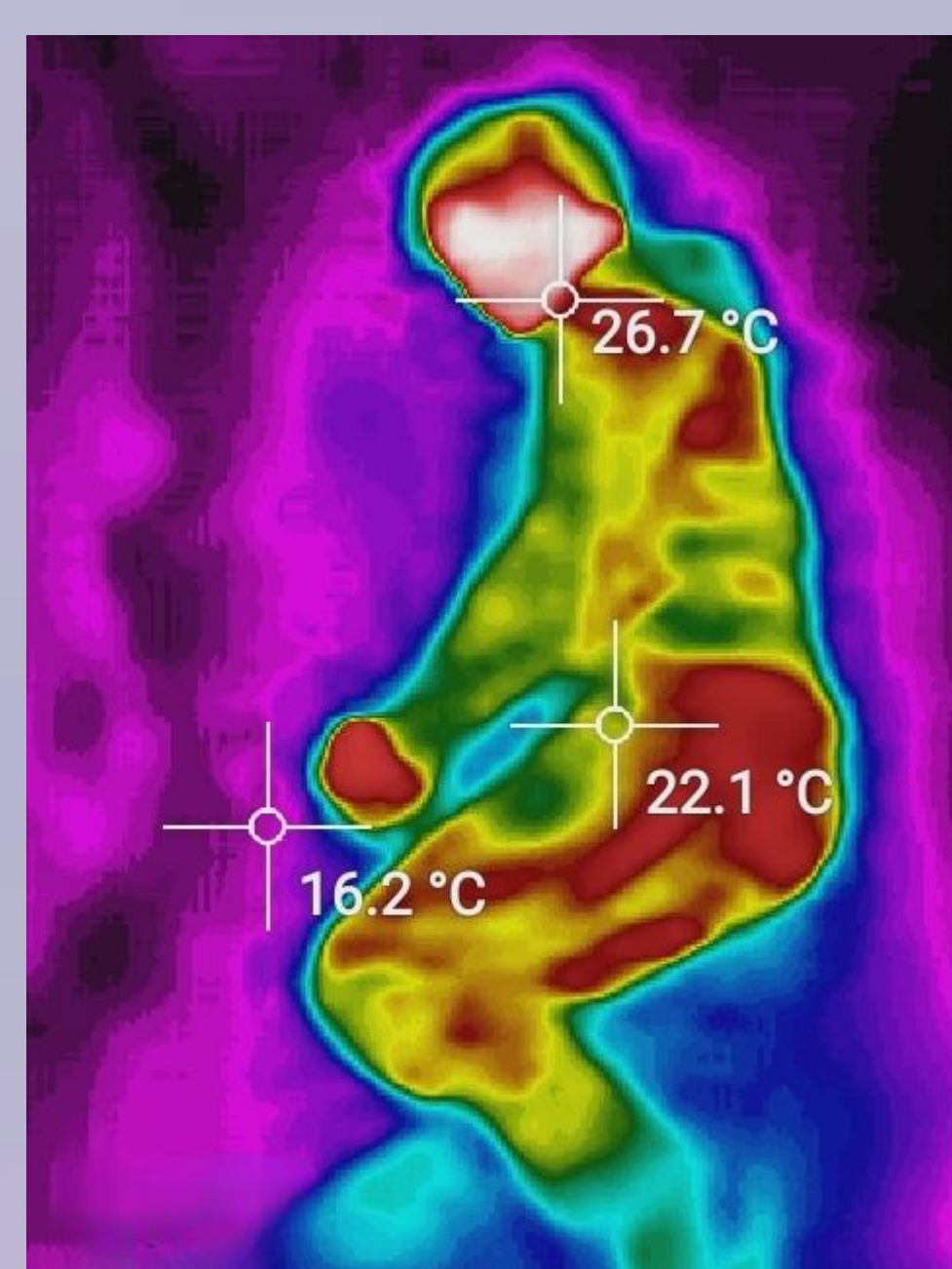- **~33%** Elderly people living **alone**

3 GOOD HEALTH AND WELL-BEING

Methodology

- **Detect** the **status** of **Person**
- **Control Devices** by the **status**
- **Fit within elderly's preferences**

- **Object detection**
  - **Yolo v5**
- **Gesture analysis**

- **IR camera**
  - **Visual image**
  - **Thermal image**

26.7 °C
22.1 °C
16.2 °C

- Other home **IoT devices**
  - **Lights**
  - **Air-conditioner**
  - **Music box**

Application

Actions	Case1(When)	Case2(When)
Call ambulance	High fever/ Hypothermia	Fall out of bed and fainted
Control air-con	Optimal body temperature	Optimal bed temperature
Care service	Not able to sleep	Possible diseases
More To Go		

- **Safe** and **Cozy** environment
- **No action** required
- **Healthy sleep**
- Can **customize for different cases**
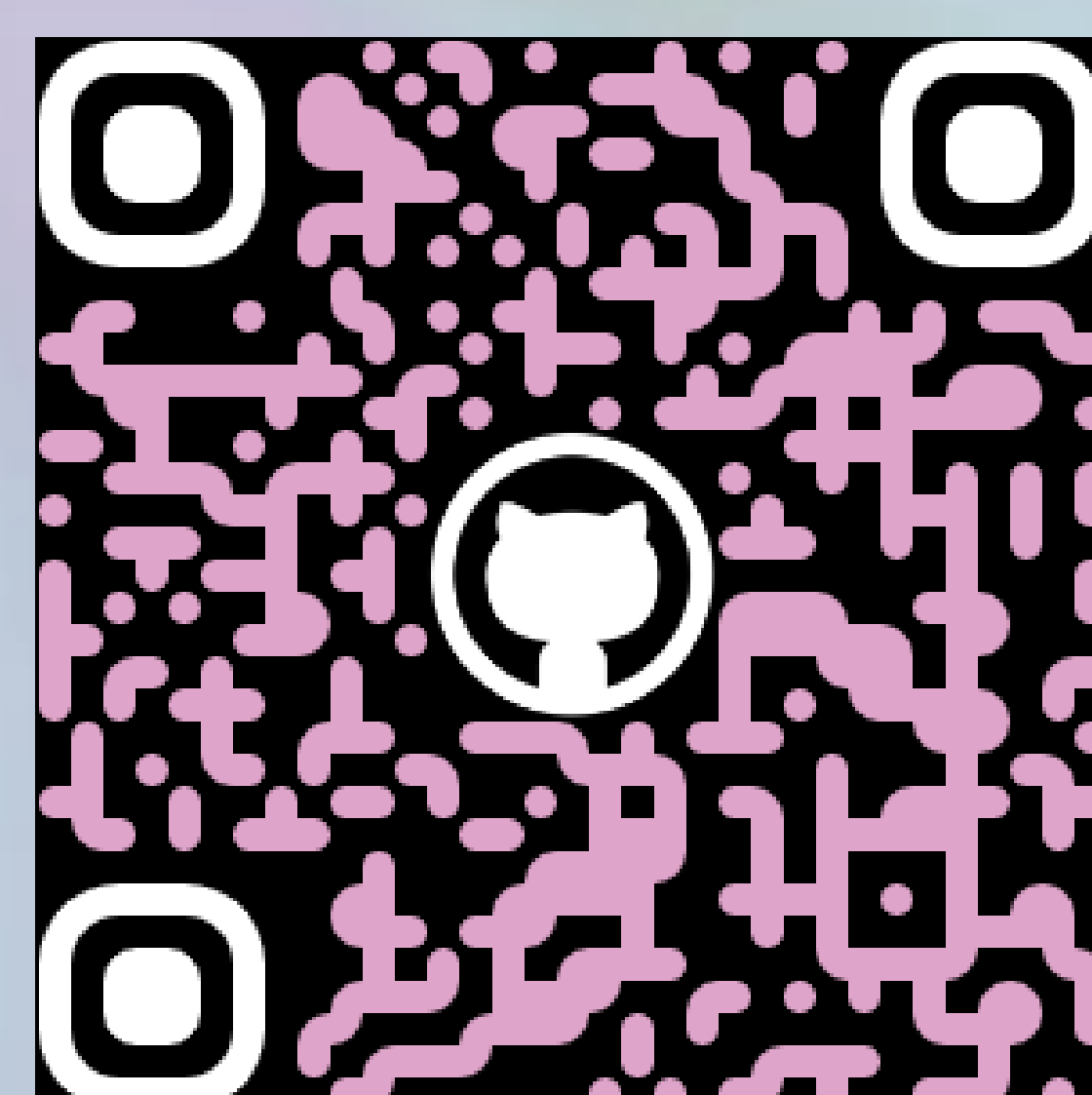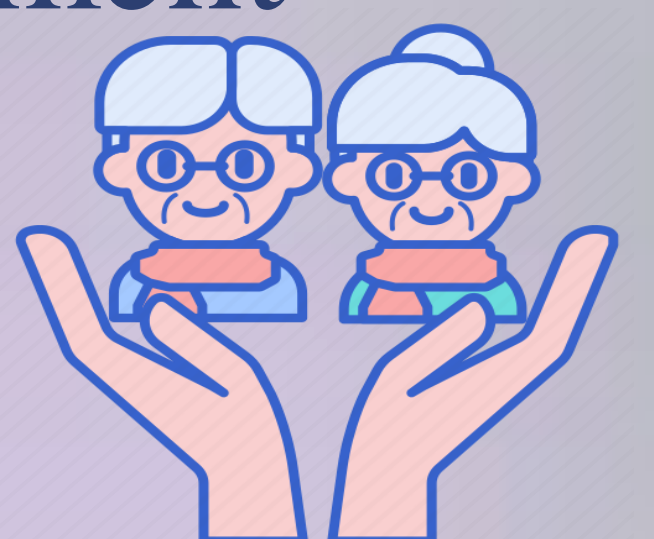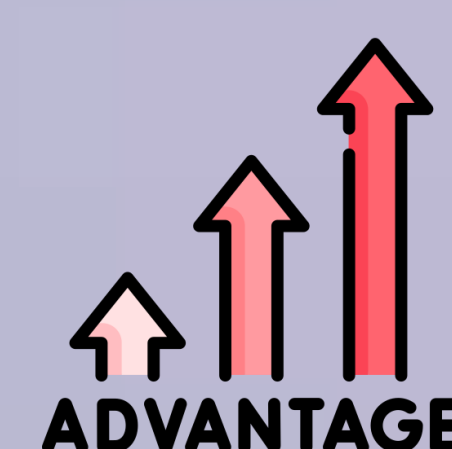
GitHub Link   YouTube Link

Conclusion

- **Ensure bedroom safety**
  - **40% of household injuries**
- **Suit elderly's situations**
- **All automatic(Few labour needed)**
- **Cater elderly's needs**

ADVANTAGE

- **Extend the system**
  - **Include other living spaces**
  - **E.g. Living room, kitchen, etc.**

FUTURE

- **Continuous revenues**
  - **Care-on-Call service, etc.**
- ✓ **To Support continuous update**