

AIoT Bedroom

Student: 04 Au Ka Long

Project ID: P21

Abstract



AI and IoT technology to improve bedroom environment

Objective

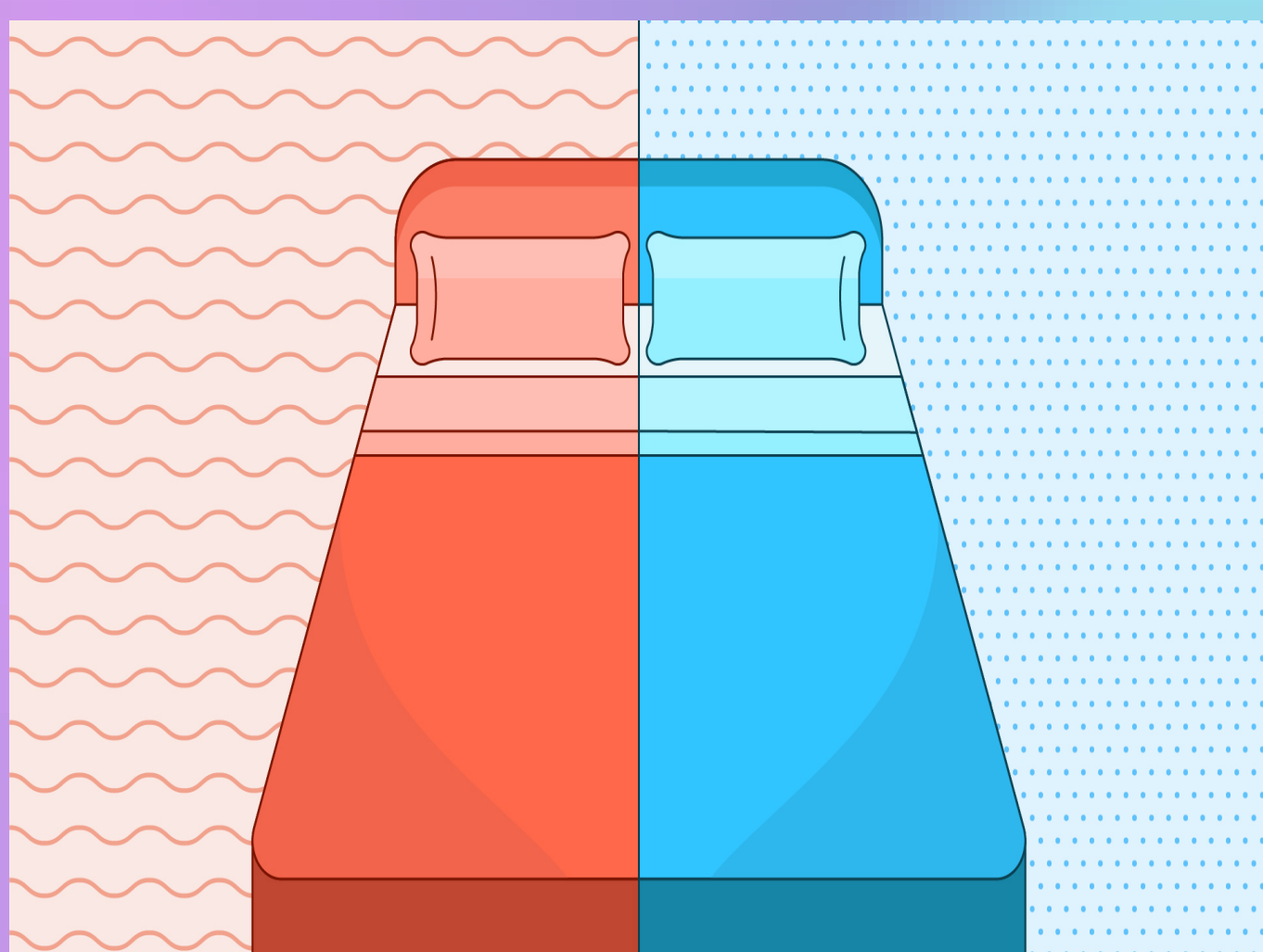


- Cozy bedroom
- 100% Relaxing
- 100% Automation

Motivation



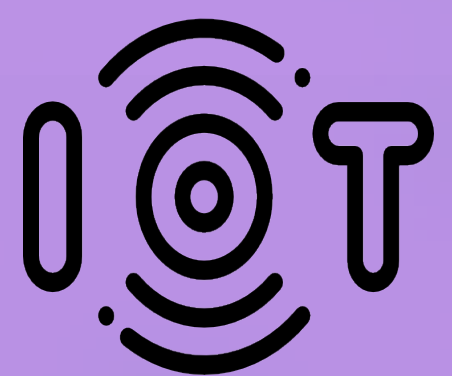
- Annoyed of Turn off lights on bed
- Feeling hot/cold when sleeping
- Harmful for Eyes, phone in dark
- ETC



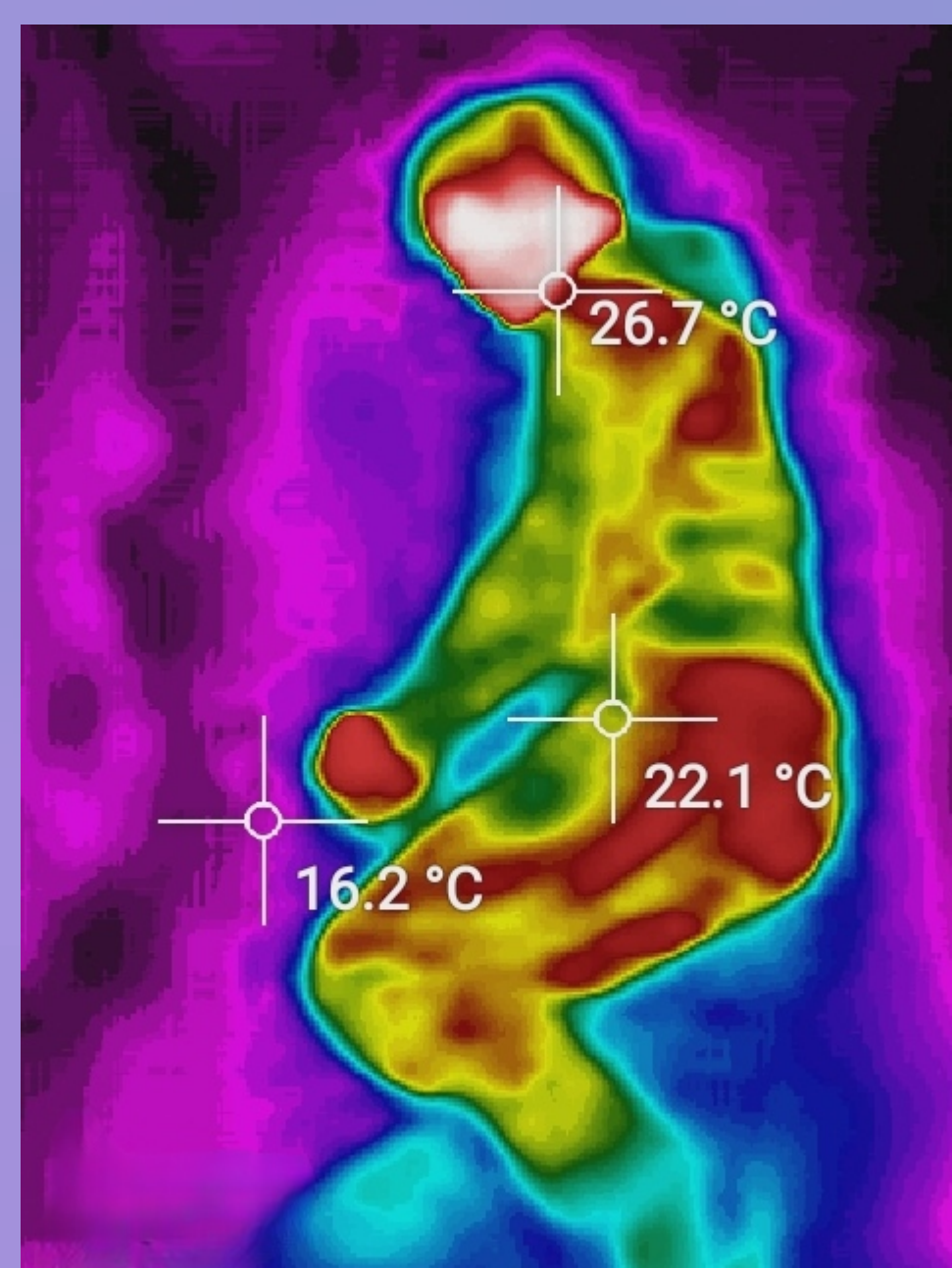
Methodology



- Object detection
 - Yolo v5
- Gesture analysis



- IR camera
 - Visual image
 - Thermal image
- Other home IoT devices
 - Lights
 - Air-conditioner
 - Music box



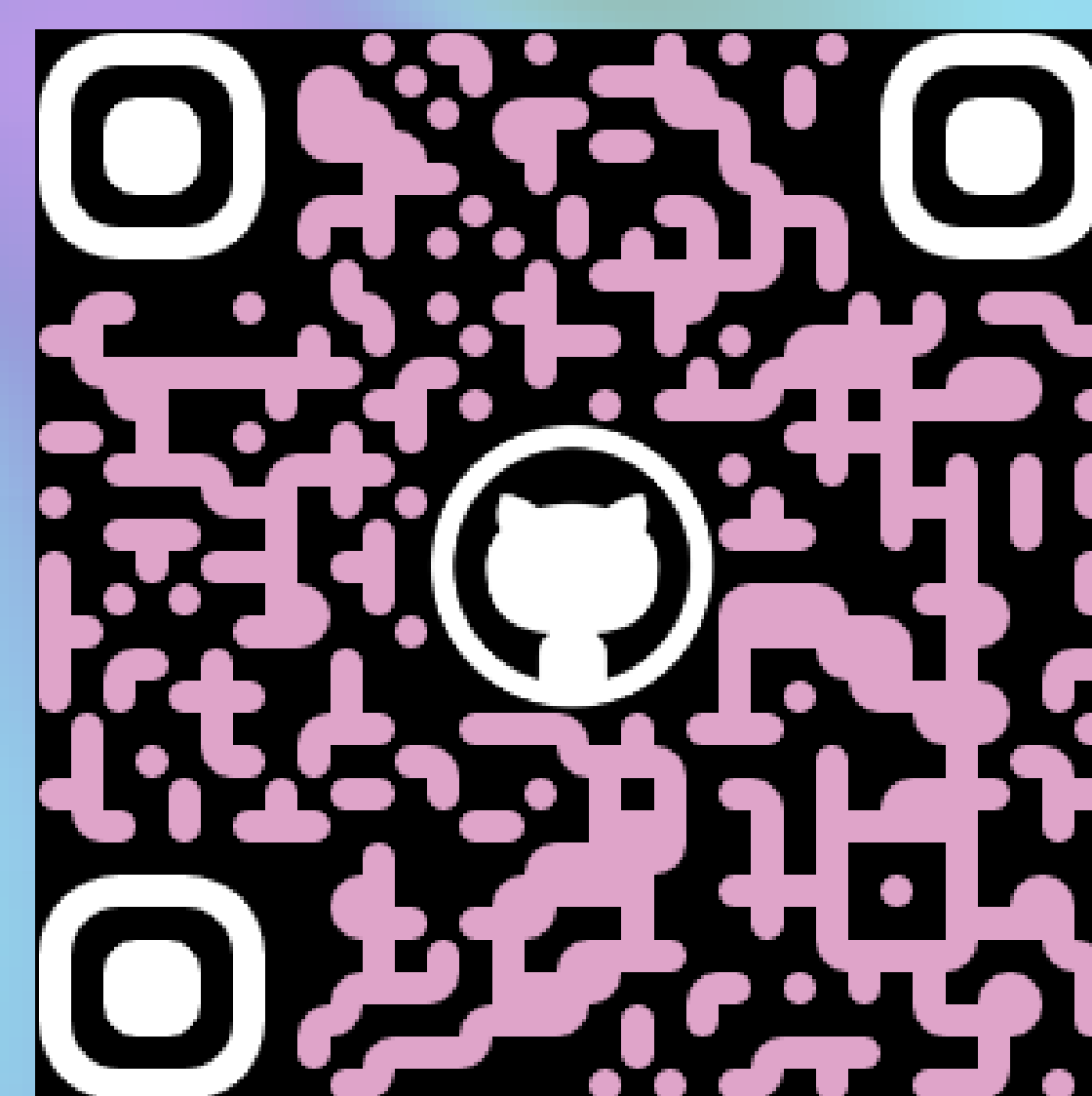
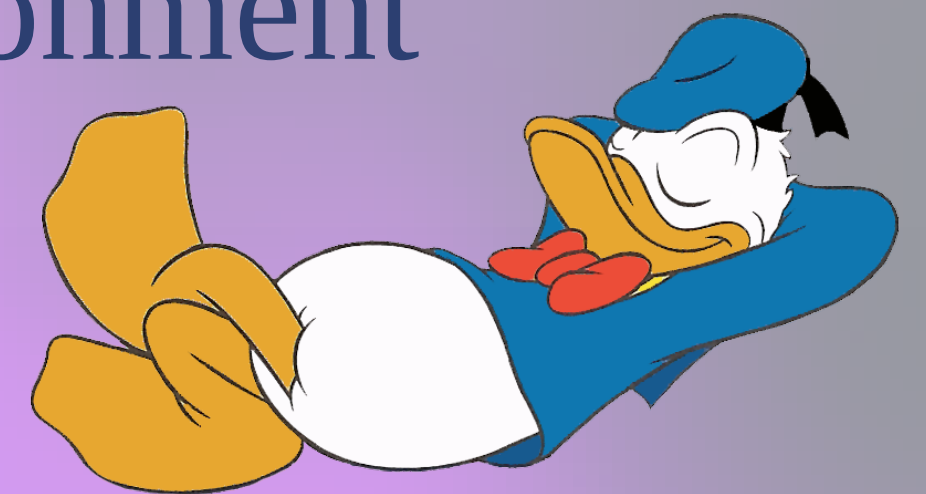
- Detect the status of Person
- Control Devices by the status
- Fit within your preferences

Application

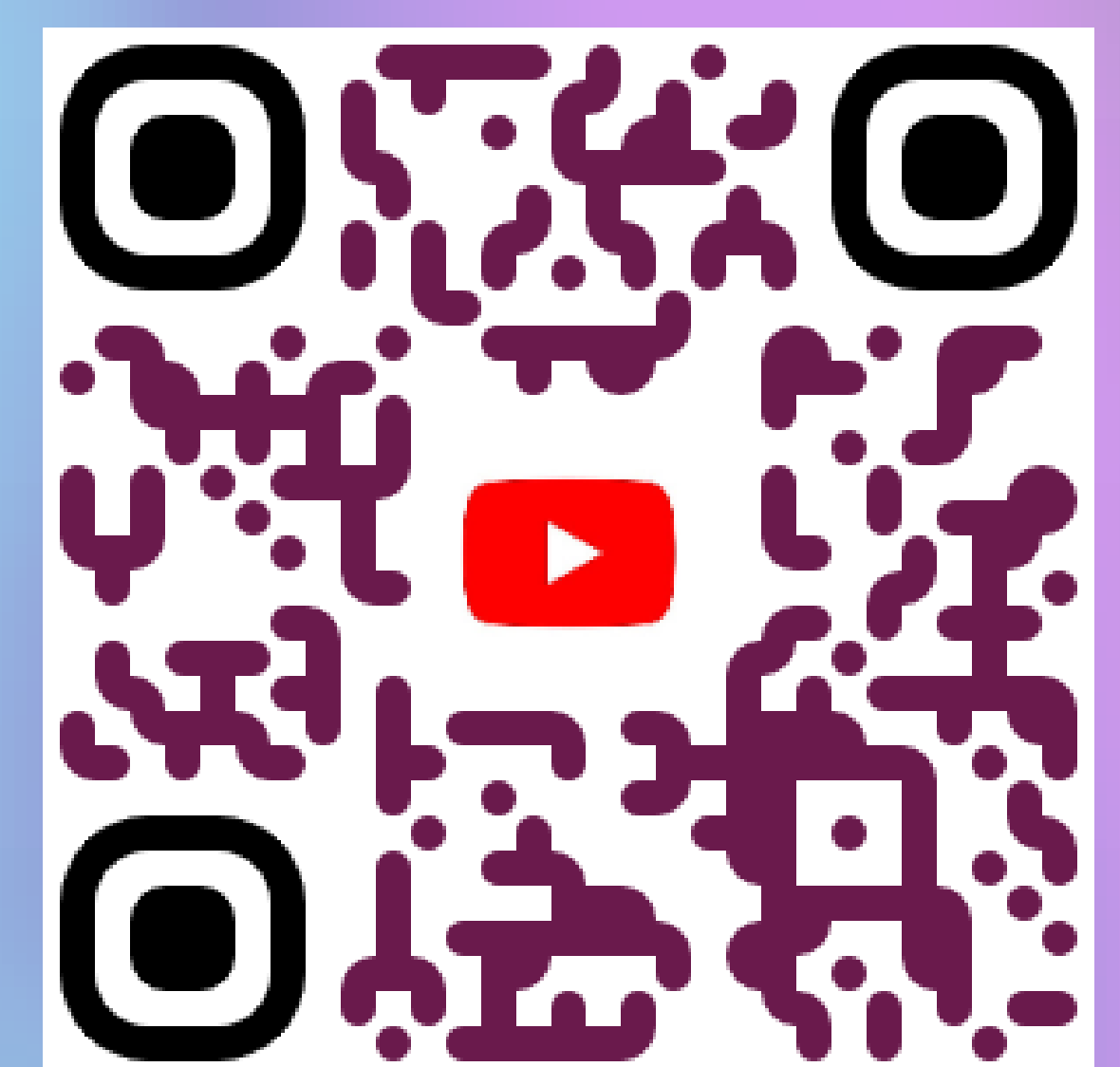
Actions	Case1	Case2
Call ambulance	High fever/ Hypothermia	Fall out of bed and fainted
Control lights	Sleeping mood	Using phone
Control air-con	Optimal body temperature	Optimal bed temperature
More To Go		



- Safe and Cozy environment
- No action required
- Wide range of users
- Can further customize



GitHub Link



YouTube Link

Conclusion



ADVANTAGE

- Extensible with IoT devices
- Ensure bedroom safety
 - 40% of household injuries
- All automatic
- Cater your needs



FUTURE

- Custom dataset
 - Use Thermal image
 - Higher privacy



- Co-operate with IoT company
 - Service bundle with products
- Selling IR camera with system