HarmonyHush Monitor

Student Name: Ruslan Zhabskyi **Student ID:** 20104105

HarmonyHush, a smart baby monitor, assists you in ensuring secure and restful sleep for your child, enhancing the overall sleeping experience while enabling guardians to enjoy more hours of rest.

HarmonyHush is equipped with sensors and a camera to monitor the environment. It uses Machine Learning to analyse the environment around the child during sleep time.

Key features:

- Live video monitoring
- Temperature, pressure, humidity monitoring
- Movement and sound levels monitoring
- Room temperature control
- Child out of cot monitoring (for example child falls during sleep on the floor)
- Pet near the child monitoring
- Data collection and processing to make future decisions on child's sleep improvements
- Real time notifications
- User friendly web app interface

Benefits:

Monitor your child in real time.

Measure sleep trends such as total hours slept and number of wakings.

Analyse data to see what external factors disrupt your child's sleep (ex. temperature change, noise, light etc.).

Receive alerts for potentially dangerous situations (ex. cat sleeps on top of a child, child falls on the floor).

Tools, Technologies and Equipment

Hardware:

- Raspberry Pi 4 Model B (4gb)
- Sense HAT
- RPI 8MP Camera
- PIR Sensor
- Sound sensor
- Breadboard, resistors and jumper wires

Technologies:

- Python
- Bash
- JavaScript
- TensorFlow
- Cisco Packet Tracer
- ThingSpeak IoT platform
- MQTT
- IFTTT
- HTML, CSS
- Handlebars
- Bulma
- Glitch
- GitHub

Project Repository

https://github.com/Ruslan-Zhabskyi/HarmonyHush-Monitor