

Smart Space

10th September 2019

OVERVIEW

A smart space contains physical sensors which collect data on the local environment, e.g. CO₂, VOC, sound, light, temperature and humidity. These physical sensors may be combined to create virtual sensors, e.g. a coffee sensor which determines that a pot of coffee has been brewed based on recorded sounds and VOC readings.

GOALS

1. Integrate the physical sensors with a computer which can process the recorded data.
2. Create virtual sensors which combine physical sensors through machine learning.
 - a. Water tap sensor
 - b. Coffee sensor
 - c. Light sensor
 - d. Occupancy sensor

SPECIFICATIONS

Use the supplied Enviro+ HAT and Raspberry Pi to collect data from the environment in a room or similar space. Refine these raw sensor readings to create virtual sensors which can sense specific events of interest, e.g. whether a meeting room is occupied, food is being prepared or a machine requires maintenance.

MILESTONES

Data Collection from Physical Sensors

The physical sensor operate correctly and report readings to the host computer.

Creation of Virtual Sensors

Virtual sensors exist which combine readings from multiple physical sensors and process them to discern events of interest for the virtual sensors.