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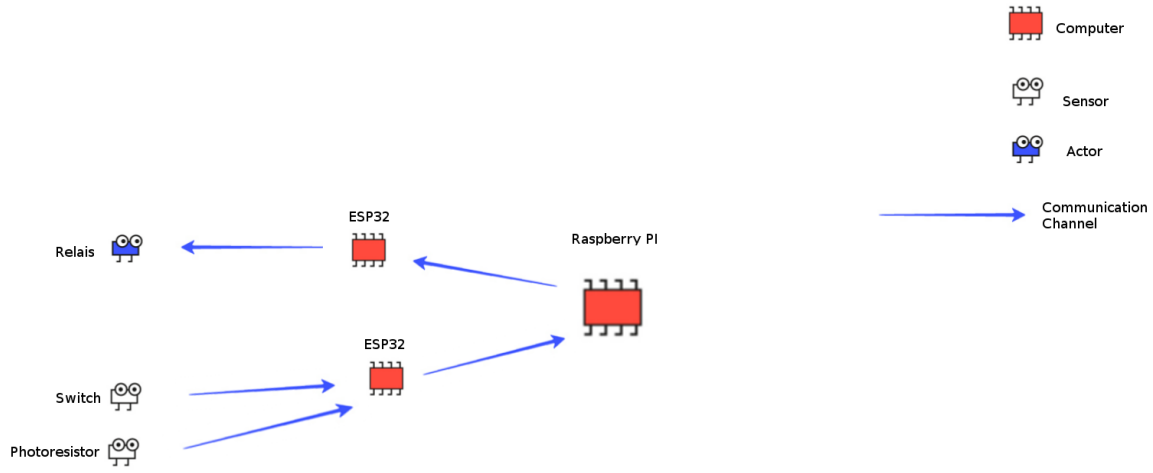
Abstract

Goal of the Project is to automate a desktop lamp with the help of sensory data and machine learning. We aim to build a setup of Sensors and computation devices that allows to
1. continuously collect sensory data
2. continuously process sensory data (updating the model with current sensory data), and
3. let the processing algorithm set the state of the lamp (i.e. turn it on and off).

The ideal result would be a desktop lamp that automatically turns on when needed without the user having to interact with it.
We emphasize that the desired status of the lamp will not be defined by the programmer (e.g. by setting a threshold), but will be learned by the model based on sensory data provided to it over time.



Tasks

- Provide Sensory Data from switch and Photoresistor to the Raspberry

- Make the Relais act on data from the Raspberry

- Data Aggregation: Write and run a program on the Raspberry that collects sensory data and aggregates it in some data format.
    - Example of the data frames that result from the Aggregation:

Time	Brightness	Lamp State
18:00	0.8837	On
18:05	0.8244	On

- Classifier: Write and run a program on the Raspberry that applies some machine learning algorithm to train and update a model based on the data from the Aggregation.

- Decision Maker: Build a program that queries the model that results from the training task and sends signal to the relais based on the result of the query

- Ensure that all programs executed on the raspberry work well together and in correct order …