ConnectMyEV
BRINGING POWER TO EVs

E-Mobility (USA)

Objective

ConnectMyEV - based in Silicon Valley and formerly known as Green-Dot-Charging, is the world's leading provider of smart and hands-free chargers for Electric Vehicles (EVs). The objective is to add web server capabilities to the robot software which controls the movements of the robotic arm and charging operation, so it can talk to with the other applications in the system using a well-defined REST interface.

Scope

- Spin up a web server inside a thread in the robot software
- Design and implement REST endpoints for the robot software
- Accept commands from client applications and return the response
- The endpoints can change robot operation parameters and/or provide status information
- Define a data exchange format using JSON
- Pass messages to other threads inside the application using Linux message queues to execute commands

Challenges

- Set up the complete Development environment on a Raspberry Pi
- Spinning up a HTTP web server inside the Robot software
- Communication between web server and other parts of the software which controls the robot

Technology

- C
- C++ (Standard 2014)
- Python
- OpenCV
- Make

Benefits

- Standard interface to communicate with the Robot software based on REST principles
- Different robot commands can be be executed by client applications remotely
- Real time communication with the application
- Any application regardless of programming language can talk with the robot software

Key features

- REST based web interface make communication with Robot software very easy
- Intuitive and easy to consume the web APIs
- Supports data exchange in JSON format
- Remote robot command execution

ConnectMyEV app and api demo
https://youtu.be/aagvk7U5RDA

Raspberry Pi setup
https://youtu.be/AfRMK22yxSQ