

November 22, 2017

Thor List
CMLabs

Thor.

Before I get to the questions I need to setup the environment and variables so we understand each other. What we are talking about is the physical locations of the robots and the server. Therefore we have: A server; which we assume we can use the Ubuntu machine currently held up here. And two turtlebot robots able to drive around and sense the environment.

Within these robots we have a ton of software and processes. On each robot we have [please correct me if I am wrong and append if something is missing]

- Mapping, Localization and planning (SLAM)
- Image
 - Human locator - ?ROS
- Audio
 - Recording
 - Speaking

Then on the server side we have

- Collaborate mapping
- Facial recognition - ?ROS
- YTTM
- Task Dialogue Manager

Structure Questions :

I am still finding it hard to understand where each software component goes. Where would YTTM and TDM be? On each robot or the server module? If it goes on the server module; would you then agree that we need to turn off other modules, such as facial recognition and mapping, in order to maintain as high a bandwidth for commu-

nications? Here I feel that Kris would suggest keep streaming the video feed from the robot that is in dialog since in the future facial expressions and general kinetic information can be recieved through there (outside the scope of current project). You can see how quickly we will overflow even a highly capable CPU if we are running to many objectives at once.

The way I see it, and therefore the current TDM is inherently structured, is as it runs on the Server side recieving the audio stream and deciding what to do. If that is the case we need to create a lockable stream so that the TDM is only talking to the robot that is currently in dialogue.

Psychlone Questions :

Lets start off with backend questions. I find it hard to understand how Psychlone works. Does it use threads or some split scheduling? This matters from my point of view since I think about how the TDM will run, will it run uninterrupted or will it get a timeslot allocation.

Do we run TDM inside or along-side Psychlone. The difference being that insede it takes up space and time scheduling and I wasn't able to load the Numpy library by doing that.

Future work:

As the letter above suggests we have quite a way to go so I must ask you how you think we can optimize the process. Do you think that the task of reviewing and updating the literature on psychlone is worth the effort we must put into it? It is a real question since the work required to get the documentation to a legible state requires quite an effort on your behalf. Obviously this can increase the repotoire of Psychlone, making it more user friendly and accessable. In the long run it can help sell your product.

However, the quicker way, and the method that would result in faster prototyping, is for me to write the software; being aware of which connections to keep open and you can fill in the pieces regarding Psychlone.

Given that you are the specialist on this topic and we are discussing the work that will

eventually fall on your shoulders which approach would you prefer.

Best wishes and many thanks,

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Don't forget that the current software is on the github repo : <https://github.com/IIIM-IS/cocomaps>