Chalmers, Volvo GTO, GPSS
ViMCoR Project

Module Description: Semantic Segmentation

Dr. Emmanuel Dean

April 23, 2021

1 Module Description

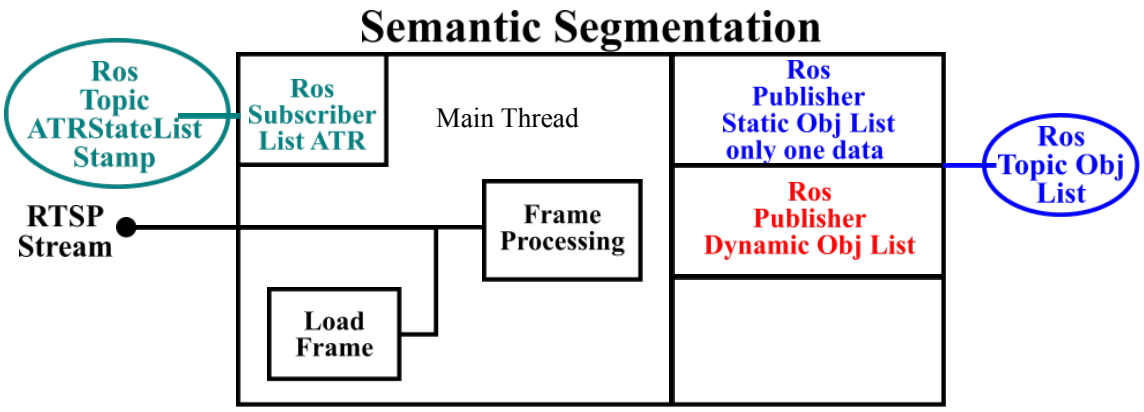

Figure 1.1: Semantic Segmentation module: This module .... short short description!

In this section you need to provide the description of the module. Focus on the module functionality. What is this module doing? Why do we need this module? **DO NOT (please ☺)** explain how this module will be implemented but rather what is this module – What and not How!!–.

$a^{-2}_{\text{des},i}$
a_i
a^{-2}_{des}
$\left\{a_{\text{des},i}\right\}$

$^{\text{L}}_{\text{W}}\dot{\mathbf{\Gamma}}^{\top}_{\text{cmd},i}$
$\dot{\mathbf{\Gamma}}^{\top}$
$^{\text{L}}_{\text{W}}\dot{\mathbf{\Gamma}}^{\top}$

$\dot{\mathbf{T}}^{\top}_{\mathrm{W}}{}^{\mathrm{L}}_{\mathrm{cmd},i}$

$\dot{\mathbf{T}}^{\top}_{\mathrm{W}}{}^{\mathrm{L}}_{\mathrm{cmd}}$

$\dot{\mathbf{T}}^{\top}$

$\dot{\mathbf{T}}^{\top} \in \mathbb{R}^{4\times4}$

$\dot{\mathbf{M}}^{\top}_{\mathrm{cmd},i}$

2 Module Connections

Please describe the inputs and outputs of the module. Why this inputs and outputs are needed, from the point of view of functionality (of the whole system). Tag the mathematical symbols with the physical types of the table, *see: Documents/TypeClassesOverview.ods*.

2.1 Inputs

2.2 Outputs

2.3 Inter-Connections

Please describe which modules are the possible inputs (which modules are connected to this module), and possible outputs (who will be connected to this module). Also why this connection is needed.

2.4 Common Methods

Provide some examples of the standard/common methods (mathematical/physics/robotics/ models) used in this module.

$$\tau = -K_d S_q + Y_r \Theta \tag{2.1}$$

$$S_q = \dot{q} - \dot{q}_r \tag{2.2}$$

$$Y_r \Theta = M(q)\,\ddot{q}_r + C(q,\dot{q})\,\dot{q}_r + G(q) \tag{2.3}$$

References

[1] Mark W. Spong and Seth Hutchinson and M. Vidyasagar, Robot Modeling and Control. Wiley, 2005.