

Robotic Self-awareness

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Abstract

This paper presents the first self-awareness experiment for a robot. The robot got to know it self before deal with the environemnt.

1 Introduction

- Small story behind this paper

With current advances in the robotics multisensory platforms, it is time to utilise these capabilities and construct a robot that able to dynamically interact with humans and other robotic agents.

- last paragraph of the paper structure.

1.1 What is self-Awareness

- self-awareness definition in human.
- why it is important in the human (one sentence).
- self-aware the robot fesaibility, if applicable.
- emphasis the in-to-out approach (one sentence).

1.2 Absence of self-awareness and the problems associated with a robot lack of self-awareness

- current robot status and how robots works in some different environments.
- some problems because of robot is not aware.
- possible applications.

2 Literature review

2.1 levels of self-awareness

- Human five levels of self-awareness

2.2 Related literature on self-awareness

- current efforts to create the robot self-awareness.
- other methods and approaches to create the Robot self-aware.
- our method and approach to create the robot self-awareness.
- why we see our approach is better and unique (from in-to-out).

3 The Self-Aware Architecture

3.1 Design and Rationale

- design to devise SA in robot.
- utilise the sensories in relation with from in-to-out rationale.
- the design of DNN model (selfy model).
- maybe other rationals behind the design.

3.2 Materials and Methods

- required data and the explanation of that data.
- data collection and the data description.
- maybe how data collected.

3.3 Implementation of Level 1

- process description for DNN model with collected data.

4 Experiment

4.1 Evaluation cases

- describe the cases.
- results achived.

4.2 Discussion

4.2.1 How to move forward to Level 2

knowing the self-body is achieved in this experiment and that constructed the initial sense of self in the baxter robot, but the body articulation and exact situation is not figured out yet by baxter, thus developing situation stage which represent level 2 of self-awareness is the next step to let robot able to control its self in the environment.

5 Conclusions and Future Work

Work on next level of self-awareness.