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Cognitive Service Robots

Ricardo TELLEZ [1]
PAL Robotics, C/Pujades, 77-79 Planta 4º Puerta 4ª
08005 Barcelon, Spain.

Keynote Abstract: Current approaches to intelligent service robots follow an idea borrowed from Good-Old-Fashioned Artificial Intelligence (GOFAI): very complex planning algorithms will produce artificial intelligence. Hence is basically a matter of CPU power to have an operative artificial intelligence for a robot. An example of this belief is the current trend in robotics that uses the cloud as the brain of the robots. It is assumed that the cloud will have CPU power enough to handle object recognition, speech recognition, or grasping. However, current experiments in speech recognition indicate that despite the increase in CPU power along the last years, the speech recognition rate has reached a plateau (not good enough for a real life system).

I will argue that this brute force approach is preventing us from attacking the hard problem of artificial intelligence, that is, make a robot understand. Cloud robotics will not lead to the kind of intelligent robots we need for a human environment. Instead, the solution goes by having robots that are more cognitive (whatever it means), being understanding the main cognitive ability they need. I will define (or not!) what a cognitive robot is, and why this type of cognition is required for robots that have to live on a dynamic human environment.

Brief Biography: Ricardo Téllez, holds a PhD on Artificial Intelligence by the Technical University of Catalonia. His thesis was devoted to the control of complex robots using neural networks, and how those robots can create their own concepts about the world.

He has been working for more than five years at company Pal Robotics developing service robots. He developed the navigation systems of human size humanoid robot Reem-B, making it the first human size humanoid robot able to move autonomously. At present, he develops better navigation systems for humanoid robots in crowded environments, allowing them to move safely for both the robot and people.

He is especially interested on the development of service robots that can really understand their environment.

[1] Corresponding Author: Ricardo Téllez, Pal Robotics, Spain. E-mail: ricardo.tellez@pal-robotics.com