Abstract

In this paper, we propose the software and hardware architecture for specifically Autonomous Robots using distributed embedded system. These concepts have implemented in developing a prototype robot. An autonomous robot has minimum three components a. sensor b. controller c. actuators. A distributed embedded system is most enabling technology in developing an autonomous robot, since it contains many computing nodes. Distributed systems are set of sub system, which are independent embedded system but works as a single system for a single goal. Software architecture plays a vital role for the control system of hardware. It uses interdependent layered architecture for the control structure of the robot. The software layers are built on top of "physical layer", which consists of actual sensors and robots. On top of physical layer is the "logical layer" which provides access to the
actual physical layers. The other layers are "module substratum", "central controller", "planner", "cognitive layer" and finally the "interpreter". The proposed model aims in reducing the complexity of hardware, interdependent software architecture and a level of autonomy.

References

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Index Terms

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Keywords

Software  Hardware architecture  Cognitive layer  Autonomous robots.