An overview on real-time control schemes for wheeled mobile robot

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ABSTRACT
The purpose of this paper is to review real-time control motion algorithms for wheeled mobile robot (WMR) when navigating in environment such as road. Its need a good controller to avoid collision with any disturbance and maintain a track error at zero level. The controllers are used with other aiding sensors to measure the WMR's velocities, posture, and interference to estimate the required torque to be applied on the wheels of mobile robot. Four main categories for wheeled mobile robot control systems have been found in literature which are namely: Kinematic based controller, Dynamic based controllers, artificial intelligence based control system, and Active Force control. A MATLAB/Simulink software is the main software to simulate and implement the control system. The real-time toolbox in MATLAB/SIMULINK are used to receive/send data from sensors/to actuator with presence of disturbances, however others software such C, C++ and visual basic are rare to be used.