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Virtualisation of the JetRacer ROS AI KIT platform using a simulation environment

Simulation environments perform an important function in modern technical processes. Skillful utilization of such environments reduces testing costs and time associated with implementing solutions, thereby expediting development efforts. This paper focuses on reviewing the application of selected simulation environments for integration with the JetRacer ROS AI KIT mobile platform. This study is motivated by the need to enhance the movement and navigation quality of autonomous mobile robots by exposing them to a greater variety of scenarios generated within simulation environments. Data exchange between the robot's sensors, camera, and the computer environment is facilitated through the Robot Operating System. The study confirmed the feasibility of accurately virtualizing the robot's environment using simulation software. Employing this method has enabled the utilization of a greater array of learning scenarios and has opened prospects for further improving the navigation quality of autonomous robots in complex environments.
Keywords: simulation environment, autonomous robot, ROS

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