ANALYSIS OF "P" AND "PID" CONTROLLER IMPLEMENTED MOBILE ROBOTS FOR DIFFERENT TRAJECTORIES

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ABSTRACT

According to the many definitions a robot is an intelligent agent may be based on a mechanical structure or even in cooperates with a software structure, which is in other words a total virtual agent. The nominal robot is a electro-mechanical machine which consists of several components for manipulation. The main parts consist of a computer or a micro controller unit, a program and some electronic gadgets including sensors, actuators and power regulators, etc.

There are many different types of robots. The classification can be autonomous or semi-autonomous or even those which are used for research into human-like agents, such as ASIMO and TOPIO, as well as those with more defined and specific roles, such as Nano robots and Swarm robots and helper robots which are used to make or move things or perform menial or dangerous tasks, such as Industrial robots or observing robots. Another common characteristic is that, by its appearance or movements, a robot often conveys a sense that it has intent or agency of its own.

The navigation of robot is a very common problem because it demands a lot of money, programming and computing as well as analytical thinking of the designer. The results of our research discusses about analytical aspects of several navigational algorithms deployed to a prototype mobile robot system consisting a leader and a follower. The deployed algorithms are expected to behave under non-holonomic constraints. The algorithms are based on P, PID, and an algorithm based on velocity, direction and distance are amongst the test conditions. The results justified the expected accuracy of each algorithm and revealed the importance of each algorithm considering financial constraints.

***Key words*:** P, PID, Positive definite, Navigation.