

An Efficient Control Effort for Stabilizing Two-Wheeled Robot

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ABSTRACT

A two-wheeled robot is an example of a self-balancing robot, which piques interests among engineers. It is, due to its nature, that can not be made stable by using its mechanical structure. Hence, it requires such a proper controller. Here, we propose a state-feedback controller based on Coefficient Diagram Method (CDM) for stabilizing the robot. Based on the simulation, it is verified that our proposed controller quickly stabilizing the pitching angle of the robot. Furthermore, it requires more efficient control effort than LQR-based controller.

Kata Kunci: *Mobile Robot, State Feedback Controller*