

**FUZZY LOGIC CONTROLLED INVERTED
PENDULUM**

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Abstract

The inverted pendulum is a classical control problem, which involves developing a system to balance a pendulum on a horizontal plane. For imagination purposes, this is similar to trying to balance a stick on a finger. The application of an inverted pendulum can be considered as rocket, walking robot and mini Segway scooters.

Different control algorithms have been used to control an inverted pendulum. I have been used fuzzy logic to control the system. The system was developed on horizontal plane and a sensor has been used to identify the position of the pendulum. A head of a printer has been used as the horizontal plane. The drive mechanism is an AC motor with a sprocket mounted onto its shaft to pull a belt. An accelerometer has been used as the sensor and the fuzzy system was implemented by a PIC 18F452 microcontroller which varies the speed of motor by using PWM.