

Realization of model port crane with state feedback control

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Abstrak

The cranes are widely used to facilitate the transport of goods. This project aims to create a miniature crane to study and analyze its behavior, especially the swing of the load while moving, and then develop and implement a system controlling the position and velocity of the load of the crane using a specific control technique. The purpose of controlling this apparatus is automatically move the crane to a particular position at a certain speed, while trying to keep the swing of the mass to a minimum/no sway. The method used is the state feedback control implemented in VB.net and it produces a very good response. The overall structure of the miniature crane system consists of a computer/program, the LabJack, amplifiers, a motor, sensors, and the miniature crane apparatus. The use of linearization technique could overcome the problem of the dead zone on the motor.