

NEURO-TABU-FUZZY CONTROLLER TO STABILIZE AN INVERTED PENDULUM SYSTEM

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ABSTRACT

This paper proposes a new control structure with its application in stabilizing an inverted pendulum system. The structure is neuro-fuzzy control of which initial parameters of the neural network are obtained from the adaptive tabu search, hence the name "neuro-tabu-fuzzy controller". This proposed controller consists of the Single Input Rule Modules (SIRMs) and the dynamic importance degrees (DIDs). The learning of the neural network results in the DIDs. The simulation results indicate that the proposed neuro-tabu-fuzzy controller has an ability to stabilize a wide range of an inverted pendulum system.