

# Genetic Algorithm for Underactuated Swing-up Robot Fuzzy Controller

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**Abstract:** In this paper, the Genetic process is used for finding optimal swing-up control parameters of an underactuated robot: the so called Pendubot. This mechanism consists of a double pendulum actuated only at the first joint. A Dynamic Soft-Switching Fuzzy System (DSSFS) consisting of two Multi-Input Multi-Output (MIMO) fuzzy controllers and a Soft-Switching function is applied to this system. A result of the simulation show the success of Genetic Algorithm's application for this control problem.

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