

Conditions for Fault Recovery of Interconnected Asynchronous Sequential Machines with State Feedback

Authors : Jung-Min Yang

Abstract : In this paper, fault recovery for parallel interconnected asynchronous sequential machines is studied. An adversarial input can infiltrate into one of two submachines comprising parallel composition of the considered asynchronous sequential machine, causing an unauthorized state transition. The control objective is to elucidate the condition for the existence of a corrective controller that makes the closed-loop system immune against any occurrence of adversarial inputs. In particular, an efficient existence condition is presented that does not need the complete modeling of the interconnected asynchronous sequential machine.

Keywords : asynchronous sequential machines, parallel composition, corrective control, fault tolerance

Conference Title : ICCSS 2018 : International Conference on Control, Signals and Systems

Conference Location : Singapore, Singapore

Conference Dates : January 08-09, 2018