Abstract

The Higher-Order Petri Net is a new class of Petri Nets that exploit the properties of higher-order neural networks. Adding time to HOPN produces a new class called Higher-Order Time Petri Net, this is the subject of our study. In this paper, a method to model the internet host reliability with Higher-Order Time Petri Net is proposed. Analysis of HOTPN model is presented. A reachability graph is defined in a discrete way by using an enumeration procedure and the reachable states of the Time Petri Net and HOTPN. Finally, we compare between TPN and HOTPN by using the behavior properties and reachability graph.

**Index Terms**

Computer Science

Artificial Intelligence

**Keywords**

Time Petri Net (TPN)  Higher-Order Petri Net (HOPN)  Reachability Graph  Internet Host Reliability.