Abstract

Non-functional requirements' assessment of enterprise architecture in system development, is important for organizations, and makes them protected from additional costs. For this goal Organizations should model their data and processes. Nowadays UML is considered as the most important modeling language, but because it's a semi-formal language, it's not qualified for assessment the system, for this in order to evaluate system, UML should transfer to a formal language such as Petri nets. In this paper, a new approach for transforming UML activity diagram to a hybrid Petri net is proposed. This hybrid Petri net is a composition of generalized stochastic Petri nets and Fuzzy Petri nets. Here GSPN has been used to show the time of activity and use them in performance calculation and in order to show the uncertainty in the data and processes of an organization the fuzzy discussion is considered. By combination of FCPN and GSPN a new Petri net is proposed which is called fuzzy generalized stochastic Petri nets. An Order processing system is used to show the performance and the accuracy of the algorithm.

**Index Terms**

Computer Science

Fuzzy Systems

**Keywords**
Mapping Activity Diagram to Fuzzy GSPN

UML  Activity Diagram (AD)  Generalized Stochastic Petri Net (GSPN)  fuzzy Petri net
Evaluate Performance
nonfunctional parameters