

# Role of Stochastic Petri Net (SPN) in Process Discovery for Modelling and Analysis.

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## *Abstract*

For exploitation and extraction of an event's data that has vital information which is related to the process from the event log, process mining is used. There are three main basic types of process mining as explained in relation to input and output. These are process discovery, conformance checking, and enhancement. Process discovery is one of the most challenging process mining activities based on the event log. Business processes or system performance plays a vital role in modelling, analysis, and prediction. Recently, a memoryless model such as exponential distribution of the stochastic Petri net has gained much attention in research and industry. This paper uses time perspective for modelling and analysis and uses stochastic Petri net to check the performance, evolution, stability, and reliability of the model. To assess the effect of time delay in firing the transition, stochastic reward net model is used. The model can also be used in checking the reliability of the model, whereas the generalized stochastic Petri net is used for evaluation and checking the performance of the model. is used to analyze the probability of state transition and the stability from one state to another. However, in process mining, logs are used by linking log sequence with the state and, by this, modelling can be done, and its relation with stability of the model can be established.

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