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Optimized Dynamic Bayesian Networks and Neural Verifier Test Applied to On-Line Isolated Characters Recognition

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Abstract : In this paper, our system is a Markovien system which we can see it like a Dynamic Bayesian Networks. One of the major interests of these systems resides in the complete training of the models (topology and parameters) starting from training data. The Bayesian Networks are representing models of dubious knowledge on complex phenomena. They are a union between the theory of probability and the graph theory in order to give effective tools to represent a joined probability distribution on a set of random variables. The representation of knowledge bases on description, by graphs, relations of causality existing between the variables defining the field of study. The theory of Dynamic Bayesian Networks is a generalization of the Bayesians networks to the dynamic processes. Our objective amounts finding the better structure which represents the relationships (dependencies) between the variables of a dynamic bayesian network. In applications in pattern recognition, one will carry out the fixing of the structure which obliges us to admit some strong assumptions (for example independence between some variables).

Keywords : Arabic on line character recognition, dynamic Bayesian network, pattern recognition, networks
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