World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Hybrid SVM/DBN Model for Arabic Isolated Words Recognition

Authors : Elyes Zarrouk, Yassine Benayed, Faiez Gargouri

Abstract : This paper presents a new hybrid model for isolated Arabic words recognition. To do this, we apply Support Vectors Machine (SVM) as an estimator of posterior probabilities within the Dynamic Bayesian networks (DBN). This paper deals a comparative study between DBN and SVM/DBN systems for multi-dialect isolated Arabic words. Performance using SVM/DBN is found to exceed that of DBNs trained on an identical task, giving higher recognition accuracy for four different Arabic dialects. In fact, the average of recognition rates for the four dialects with SVM/DBN was 87.67% while 83.01% with DBN.

Keywords : dynamic Bayesian networks, hybrid models, supports vectors machine, Arabic isolated words
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020