World Academy of Science, Engineering and Technology
International Journal of Electrical and Computer Engineering
Vol:9, No:05, 2015

SOM Map vs Hopfield Neural Network: A Comparative Study in Microscopic Evacuation Application

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Abstract : Microscopic evacuation focuses on the evacuee behavior and way of search of safety place in an egress situation. In recent years, several models handled microscopic evacuation problem. Among them, we have proposed Artificial Neural Network (ANN) as an alternative to mathematical models that can deal with such problem. In this paper, we present two ANN models: SOM map and Hopfield Network used to predict the evacuee behavior in a disaster situation. These models are tested in a real case, the second floor of Tunisian children hospital evacuation in case of fire. The two models are studied and compared in order to evaluate their performance.

Keywords : artificial neural networks, self-organization map, hopfield network, microscopic evacuation, fire building evacuation
Conference Title : ICNN 2015 : International Conference on Neural Networks
Conference Location : Berlin, Germany
Conference Dates : May 21-22, 2015