Abstract

It is herein proposed a handwritten digit recognition system which biologically inspired of the large-scale structure of the mammalian neocortex. Hierarchical Temporal Memory (HTM) is a memory-prediction network model that takes advantage of the Bayesian belief propagation and revision techniques. In this article a study has been conducted to train a HTM network to recognize handwritten digits and letters taken from the well-known Hoda dataset for Farsi handwritten digit. Results presented in this paper show good performance and generalization capacity of the proposed network for a real-world big dataset.

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**Index Terms**

Computer Science  
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**Keywords**

Handwritten digit recognition; hierarchical temporal memory (HTM); Hoda handwritten digits dataset.