Taxonomy and a Theoretical Model for Feedforward Neural Networks

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Authors:
Benuwa Ben-Bright, Yongzhao Zhan, Benjamin Ghansah, Richard Amankwah, Dickson Keddy Wornyo, Ernest Ansah

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Abstract

Feedforward Neural Network (FFNN) is a surrogate of Artificial Neural Network (ANN) in which links amongst the units do not form a directed cycle. ANNs, akin to the vast network of neurons in the brain (human central nervous system) are usually presented as systems of interweaving connected "neurons" which exchange messages between each other. These connections have numeric hefts that can be adjusted and grounded on experience, enforcing adaptively on neural networks to inputs and learning capabilities. This paper presents a comprehensive review of FFNN with emphasis on implantation issues, which have been addressed by previous approaches. We also propose a theoretical model that exhibits potential superior performances in terms of convergence speed, efficient and effective computation and generality than state of the art models.

References


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Index Terms

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Keywords

Feedforward neural networks, Margin-Based principle, Multi-layer perceptron, Single-layer perceptron, Double Parallel Feedforward neural networks, Natural networks