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Title: Convergence analysis of BP neural networks via sparse response regularization

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Highlights for review

- This study proposes a smoothing training algorithm for BP network model from the response sparsity of hidden nodes.
- The monotonicity of the error function and the deterministic convergence of the smoothed algorithm have been rigorously proved which avoid the divergence behavior from theoretical point of view.
- A benchmark large dataset, MNIST, has been implemented to verify the pruning efficiency of the presented algorithm.

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