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Structural learning in artificial neural networks using sparse optimization

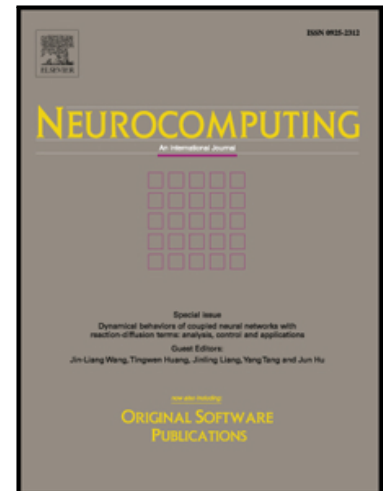
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Highlights

- Sparse optimization have been applied to simultaneously estimate the weights and model structure of an artificial neural network.
- The problem has been formulates as an ℓ_0 -norm optimization problem, which is approximatively solved with an iterative reweighting procedure.
- The proposed method reduces the complexity an artificial neural network by finding a sparse representation of it, i.e. a solution where as many weights as possible are equated to zero.
- The proposed algorithms have successfully been applied to several benchmark problems and to a case study for estimating waste heat recovery in ships.

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