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A Trellis-Structured Neural Network

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Abstract:

We have developed a neural network which consists of cooperatively inter(cid:173) connected Grossberg on-center

off-surround subnets and which can be

used to optimize a function related to the log likelihood function for decoding convolu(cid:173) tional codes or more

general FIR

signal deconvolution problems. Connections in the network are confined to neighboring subnets, and it is representative

of the types of

networks which lend themselves to VLSI implementation. Analytical and experimental results for convergence and

stability of the network have been

found. The structure of the network can be used for distributed representation of data items while allowing for fault

tolerance

and replacement of faulty units. 1

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