The Connectivity Analysis of Simple Association

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Abstract:

The efficient realization, using current silicon technology, of Very Large Connection Networks (VLCN) with more than a

billion connections requires

that these networks exhibit a high degree of communication locality. Real neural networks exhibit significant locality, yet

most connectionist/neural network

models have little. In this paper, the connectivity requirements of a simple associative network are analyzed using

communication theory. Several

techniques based on communication theory are presented that improve the robust(cid:173) ness of the network in the

face of sparse,

local interconnect structures. Also discussed are some potential problems when information is distributed too widely.