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3.9. Neural network Hopfield and its application. The revival of interest in neural networks related to the work of Hopfield, 1982.. This work has shed light on the fact that borrowed from nature network of neuronopathic elements can be used to compute goals. Researchers from many areas of knowledge was an incentive for further studies of those networks with the double purpose of a better understanding of how the brain works apply methodologie properties of these networks to solve problems which are not amenable to solution by traditional methods. 3.9.1. The idea of recurrently. Neural Hopfield network is an example network which can be defined as dynamic system running in which the output of one fully direct operation serves as the entrance the next operation of the network as shown in Fig.1 Figure 1. A binary Hopfield network. Network which work as a feedback are called recurrent networks. Each video operation network is called an iteration. Recurrent network as with any other nonlinear dynamic systems able to show a whole variety of different behaviors. In particular, one possible pattern of behavior is that the system can be sustainable i.e. it can converge to the only fixed fixed point. When the stationary point is the input to this dynamic system, the output will have the same point. Therefore, the system remains fixed in the same condition. There are periodic cycles or chaotic behavior. It has been shown that a Hopfield network is stable. In the General case may be more one fixed point. Then such a fixed point will converge the network depends on the initial point chosen for the initial iteration. The fixed points are called attractors. Many of vector points which are attracted to a specific attractor in the process iterations the network is called the region of attraction of this attractor. Many fixed points of the Hopfield network is its memory. In this case, the network can to act as an associative memory. Those input vectors that fall into the sphere of attraction of the attractor the individual are associated associated with him. For example, the attractor may be a certain desired way. The region of attraction can consist of noisy or incomplete versions of this image. There is hope the images that vaguely resemble the desired image will be remembered by the network as associated with a given image. 3.9.2. Binary Hopfield networks. In Fig. 1 shows a binary Hopfield network. Input and the output vectors consist of 1 and +1 instead of 1 can be used 0 A symmetric weight matrix consisting of integers with zeros

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