Applications of Hopfield nets

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Abstract

This document gives an overview of the structure of Hopfield networks and describes some applications in detail.

Contents

1 Introduction

1.1 What Hopfield networks are

According to [?], Hopfield networks belong to the recurrent neural networks. They are mainly used in the fields of pattern recognition and optimization. Learning is performed by modifying the strength of the connections between the neurons. The network consists of a layer where the output of each neuron is connected to the input of all other. (see Picture ??)

A Records

A.1 Record of March 10th, 1999

Recorder: Mayer August
Participants: Spitzlinger Markus
Wiesbauer Gerald

- General discussion
- Website under http://www.cosy.sbg.ac.at on Mr. Schweigers Homepage
- Requirements for the paper
  - Structure
  - Records in the appendix
  - Goal: Understanding of the topic, (detailed) description of some applications
- LaTeX-file until Di 13^{00} as TeX-Source

- Possible Applications:
  - TSP (Travelling Salesman Problem)
  - Associative Memory: Picture searching (IBM), denoising of pictures
- Should programs be written?
  - not required, but appreciated
  - also: search ready programs in the Internet
  - utilization of Java
  - would be good for presentations of the institute
- Are there ready-made simulators?
  - SNNS (Stuttgarter Neuronale Netze Simulator) is/will be installed
  - optional: search in the net
- Literature
  - Igor Aleksander, „Introduction to Neural Computing“
- Activities until next week:
  - Compressed overview of Hopfield networks
  - Later: search applications in the Internet

B Bibliography