

Chapter I: Introduction

Artificial Neural Networks are being touted as the sign of the future in computing. They are certainly self learning mechanisms which don't require the traditional skills of a programmer. But unfortunately, there are a lot of misconceptions among some users who expected that these neuron-inspired processors can do almost anything. These exaggerations have created disappointment among some potential users who have tried, and failed to solve their problems with neural networks. Those applications builders have often come to the conclusion that neural nets are complicated and confusing. Unfortunately that confusion has come from the industry itself. Many of the articles flooding the people appeared touting a large assortment of different neural networks, all with unique claims and specific examples. Currently only a few of these neuron-based paradigms are actually being used commercially. There is one particular structure, the feed forward which is also usually called as bottom-up or top-down, back-propagation network, is by far and away the most popular. Author will explain about this method in chapter 3 of this report. Most of the other neural network structures represent models for thinking that are still being developed in the laboratories. Yet all of these networks are simply tools and as such the only real demand they make is that they require the network architect to learn how to use them.

I.1 Problem Occurred

Being given a massive numbers of data requires a lot of effort to analyze and summarize even for a big company with numerous workers. Companies need a new technology to predict the trend and make decisions according to massive data silos given to be analyzed. Before the Artificial Neural Network era, all of these tasks were given to human or to a conventional programmed application. These methods didn't give companies accurate predictions like they wanted it to be. With Artificial Neural Network, system can learns and try to give what the result is although there might be imperfections of the result itself.

I.2 Goals

Either humans or other computer techniques use Artificial Neural Network to determine patterns and detect trends that are too complex to be noticed. In the

category of information has been given to process, a trained neural network can be considered as an “expert”.

The expected goals of Artificial Neural Networks are:

- To predict patterns
- To recognize patterns
- To detect trends
- To make a model of any collected given data

I.3 Report Boundaries

This report was made for academic purpose of fulfilling the task that given to the author as a student at Maranatha Christian University. The author didn't actually use or experiencing Artificial Neural Network, nor does or tries actual work related to Artificial Neural Network application or program. This report is considered as research paper which is made by doing a research information mainly through internet and websites as references, and author's knowledge only.

Although this report was made with author's best effort, but there are still some boundaries available to the fact which the author explained:

- This report explains what Artificial Neural Network is.
- Although Artificial Neural Network was implemented within a company, it is not guaranteed that company would be better than it used to be.
- Artificial Neural Network cannot do everything like user wanted it to be.
- Artificial Neural Network is not designed to solve all the problems within a company directly or indirectly.
- Artificial Neural Network must learn by sample first.
- These writing doesn't include on how technically Artificial Neural Network works or run in the application or program.
- Artificial Neural Network has the tendency to predict, not given an exact answer.
- This report doesn't show or explain the mathematical model or formula of Neural Network.