

ABSTRACT

The number of IT Telkom students from year to year has increased. This is evident from the increasing number of incoming freshmen. This will result in the number of students who passed would be increasing. In one period only students who graduated more than 400 students. At this final project the students who have graduated entered manually into the computer, this is certainly not light work. On this basis an idea or thought to create a system that allows library staff to enter data in the final.

In this thesis I created a system for documenting the book - a book final Telkom IT student. Documentation process is done through pattern recognition of alphabetic characters of an image from a webcam acquisition using neural network Self-Organizing Map (SOM). Self-organizing map neural network is trained neural network and to learn without supervision (unsupervised learning) to produce a cluster, without the need to provide a target. SOM neural network is used to recognize characters - characters that have been segmented.

The output of the system is able to recognize characters of Title, name, NIM, and year of manufacture with a high degree of accuracy, able to reconstruct the pattern - a pattern that has been segmented into words before, and able to recognize various forms of pattern alphabet characters with the best accuracy level of 82.5 %.

Keywords: Image processing, feature extraction, artificial neural networks, SOM.