

## **ABSTRACT**

Andre Tirta Winoto (08320050011)

### **THE DESIGN AND IMPLEMENTATION OF DATA ENTRY AUTOMATION SOFTWARE USING FUZZY ARTMAP**

(xxi + 156 pages: 95 figures; 16 tables; 2 appendixes)

In this information era, storing and spreading information become very important. To deliver information, a medium is needed. One of the medium commonly used is handwritten filled-form. For the sake of a safe and effective data storing, the data in a form must be entered into a database. This process is also known as data entry. Commonly, data entry is done manually. For that reason, this task needs a lot of manpower, cost, and time, especially in a big company which encounter enormous data entry. Therefore, to enhance the work efficiency and effectivity, certain software system for automated data entry of handwritten filled-forms is designed.

There are some important steps in designing this software. Firstly, the system needs a scanner to capture the image of the form. Then, the system uses image processing techniques to enhance the quality of the scanning result, before the recognition is done. The handwritten data on the form is recognized with artificial neural network using Fuzzy ARTMAP method.

During the experiments, the Fuzzy ARTMAP had been trained by 20 data samples for each character. Then, the system will recognize 180 data samples which are different from the previous one. From the experiments, with vigilance parameter as high as 0.65 or 0.75, the system reached the highest accuracy of character recognition which is 93.89%.

Reference: 15 (2003 – 2009).