## THE IMPLEMENTATION OF ARTIFICIAL NEURAL NETWORKS WITH BACKPROPAGATION METHOD TO IDENTIFY BIRD SPECIES BASED ON DIGITAL IMAGE PATTERNS WITH RGB COLOR CHARACTERISTICS AND GABOR FILTER TEXTURES

## Sutio Nur Bakti

Electrical Engineering Study Program, Faculty of Information Technology and Electro Universitas Teknologi Yogyakarta Jl. Ringroad Utara Jombor Sleman Yogyakarta E-mail sutiobakti 11@gmail.com

## ABSTRACT

Birds in addition to having the beauty of the song also has a physical beauty that is colorful fur, especially the parrot or birds that belong to the Aves class and order Psittaciformes. Many people who love this type of bird especially for those who have a hobby in ornamental birds. Artificial Intelligence technology is growing rapidly in various areas of life helping ease the work of modern man for ornamental birds enthusiasts. With the presence of this AI technology is expected to provide other functions, namely identifying or identifying a type of bird, so that the community with a similar hobby can easily determine the type of birds based on the color and structure of the fur. Each bird type has a color structure of feathers and a different form of fur arrangement texture. With digital image processing an image of a bird in the extract characteristic values based on the color structure of the feather texture using the extraction method features RGB color values and a texture filter gabor. Each bird type has different color and texture characteristics so that it can be recognized by conducting an introductory training process using a neural network backpropagation method so that objects can be identified or recognizable. In this study, three types of birds are MACAW blue and gold (Ara Ararauna), parakeets (Melopsittacus Undulatus), and Kasturi/Nuri (Lorius Garullus). The results of the system accuracy obtained from testing three types of birds in this study were 89%.

*Keywords*: Bird, Digital image processing, Extraction feature RGB color values and filter Gabor textures, Artificial neural networks, Bacpropagation