ABSTRACT

Rachmad Ramandhani. 15119125

APPLICATION OF DEEP LEARNING FOR CLASSIFICATION OF SONGBIRD SPECIES BASED ON IMAGES USING CONVOLUTIONAL NEURAL NETWORK (CNN) METHOD BASED ON ANDROID
Thesis. Department of Information Systems, Faculty of Computer Science and Information Technology, Gunadarma University, 2023.
Keywords: Birds Chirping, Convolutional Neural Network, Deep Learning, Classification.
(xv +83+Appendices)

Man's love and interest in birds has been rooted in various cultures throughout history. The melodious sounds and beauty of the colors as well as the natural, chirping behavior of birds have ignited human interest in maintaining, observing, and caring for these birds. Chirping bird enthusiasts form a diverse community consisting of nature lovers, amateur researchers, to people involved in races and competitions of chirping birds. Many chirping bird enthusiasts identify the types of birds based on color, body shape and size. Especially for people who do not have in - depth knowledge of birds so, knowledge in terms of choosing or determining the type of birds chirping resulted in ignorance of the many types of birds chirping that are found in bird markets, race venues, and observation parks. The purpose of this study is to produce an application that applies Artificial Intelligence (AI) technology, with CNN method as a classification method for chirping bird species. Several stages of development of bird chirp classification applications using the Waterfall method include the stages of Requirement Analyst, Design, Implementation, Verification, and Maintenance. This method of development process is carried out sequentially. The implementation of CNN is assisted by Teachable Machine Learning, so there is no need to use complex code to implement it. Accuracy results obtained calculation of the truth of the image that can be classified by 97%, then testing the bird object directly the average test value of each class produces a fairly good value that has an average accuracy of 89.1%.

Bibliography (2018-2023)