DIGITAL IMAGE PROCESSING NOMINAL DETECTION ON BANKNOTE FOR THE BLIND PERSON USING THE CONVOLUTIONAL NEURAL NETWORK (CNN) METHOD

FILLAH SYAKUR AZINDHA
Informatics Study Program, Faculty of Science & Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : fillahsy05@gmail.com

ABSTRACT

Money is a valuable tool as a means of payment in carrying out transactions or buying and selling in human life. Based on the material used to create it, money can be divided into 2 types, namely paper money and metal money. On banknotes there is writing to differentiate the value or nominal value between one money and another. However, it is difficult for blind people to distinguish the nominal value on banknotes. This research aims to create a system that can help blind people distinguish the nominal value of banknotes. Stages and methods used in designing the system: image processing such as changing RGB images into greyscale images. In designing the model, the model used uses the Convolutional Neural Network method. The model is trained to detect uniqueness in each banknote image. The results of the processing are visualized in the form of sound through the speakers. From the results of research trials, the designed system can identify and detect the uniqueness of money in the input image of banknotes and visualize the output in the form of sound that can be heard by blind people. It is hoped that the research that has been carried out can help blind people in distinguishing the value of banknotes, and can help other researchers who want to design devices and provide references for their research.

Keywords: Banknotes, Image, Image processing, RGB Image, Binary Image, Thresholding, and Convolutional Neural Network.