

# **DESIGN AND CONSTRUCTION OF AUTHENTICITY DETECTION DEVICE AUTHENTICITY BASED ON DIGITAL IMAGE PROCESSING USING THE YOLO ALGORITHM**

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## **ABSTRACT**

*In an era of rapidly developing technology, the need for a system that can improve the security of financial transactions is very important. One of the main challenges faced by traders is the problem of counterfeit money that can harm business, damage reputation, and threaten consumer security in transactions. This study aims to design and develop an automatic counterfeit money detector based on digital image processing using the YOLO (You Only Look Once) algorithm. This system uses a webcam camera to take images of money that are exposed to ultraviolet (UV) lights so that the watermark is clearly visible. The images are processed using Visual Studio Code software with the YOLO algorithm to match the images with the trained data. The results of the study show that the YOLO algorithm is effective in detecting the authenticity of money with high accuracy, achieving a 100% success rate and an average confidence value of 0.96. This tool is expected to provide an innovative solution in overcoming the challenges of counterfeit money that is widely circulated and improving the security of financial transactions*

**Keywords:** *Image Processing, YOLO, Money Detection*