

## ***ABSTRACT***

*Crochet is a handicraft that utilizes yarn and a crochet hook, and it has gained popularity over the years. There are various techniques in crochet, such as Single Crochet, Double Crochet, Half Double Crochet, and others. The similarity of patterns between techniques often makes identification difficult, especially for beginners. This challenge is important because the ability to identify different crochet techniques is crucial for developing fundamental crocheting skills. To tackle this issue, this study proposes a solution that utilizes image classification based on the ResNet architecture. because the ability to distinguish crochet techniques is essential for learning the fundamental skills of crocheting. The use of pattern classification technology helps simplify the recognition process, potentially increasing public interest in handicrafts, particularly crochet. In this study, ResNet50 was used as the training method. ResNet50 was chosen for its ability to maintain gradient stability during model training. The results show that the model achieved a validation accuracy of 94% and a testing accuracy of 89%. Among the five classes, the Triple Crochet and Single Crochet classes demonstrated the best and most stable classification performance.*

*Keywords: Residual Network, Convolutional Neural Network, Crochet, Deep Learning, Image Processing.*