

## ABSTRACT

### **Yudha Trisnahadi (17102144), 2022 – OPTIMASI ALGORITMA CONVOLUTIONAL NEURAL NETWORK DENGAN MOMENTUM ADAPTIVE PADA PENGENALAN POLA CITRA X-RAY PNEUMONIA**

*Pneumonia is an acute infection of the lung tissue (alveoli) which can be caused by various microorganisms such as viruses, herbs and bacteria. The lungs are organs in the human respiratory system that function as an exchange of oxygen with carbon dioxide in the blood. There is a Convolutional Neural Network (CNN) Algorithm which is a deep learning method that can be used to detect and recognize an object in a digital image. The system is suitable for solving object detection and object recognition problems. However, CNN has a weakness in the model training process which is quite long. The author conducted a study entitled Optimization of the CNN Algorithm with Adaptive Momentum aims to overcome the weaknesses of the CNN Algorithm. In this study, the CNN algorithm was optimized to get accurate results in identifying pneumonia. Optimization is done by adding some hyperparameters to the CNN architecture. By adding hyperparameters, high accuracy results are obtained, namely 93%. The hyperparameters used to increase the accuracy of the model are several dropout layers. Added dropout by 50% to reduce overfitting during training.*

**Keyword: Pneumonia, Optimasi, Convolutional Neural Network.**

