

---

## Identification and classification of Coryza infected chickens in poultry using machine learning

Zulmi Z.M.<sup>1\*</sup> and Wijerathna E.H.M.P.M.<sup>1</sup>

<sup>1</sup>*Department of Information Communication Technology, Faculty of Technology, University of Ruhuna, Kamburupitiya, Matara, Sri Lanka.*

Chicken is the most famous meat in society and the apparently the most salable meat in the markets. The most of the farmers are raising chickens to get eggs and meat for commercial purposes. There is a disease called Coryza which is infected to the chicken's eyes hardly. As a result, the chicken must be blind as well as they cannot eat well, and finally Coryza can destroy their lives. Therefore, the production of meat and eggs must be decreased. This study is mainly focused on the identification of Coryza-infected chickens using image processing techniques. 800 images of Coryza infected and well-being chickens are captured as the training dataset and 200 images of chickens as the testing dataset. Then image preprocessing and feature extraction are performed. Mutated eyes, which are extracted as features, are difficult to identify from images with complex backgrounds. The image preprocessing techniques are used to overcome that issue. A classification model is developed using MobilenetV2 in a convolutional neural network and the developed model is trained using training dataset with accuracy of 91%. The model is able to predict any given image as infected or well-being chicken with the average testing accuracy of 76%. After the identification process, if it is an infected chicken, relevant medicines are suggested to the farmers as the final outcome of this research. It will be more helpful to maintain sustainable eggs and meat production for a commercial purpose.

**Keywords:** Coryza, CNN, Image Processing, Poultry, Chicken

\*Corresponding author: [zulmifire@gmail.com](mailto:zulmifire@gmail.com)