

# I. Introduction

Every employee has competence in each of their fields. This competence exists to ensure that employees who work at a company or institution are selected suitable employees in their areas. Therefore, the company or institution needs to evaluate its employees to maintain their credibility and performance. Many things can be an evaluation factor, one of which is employee activity during working hours. Employee activities explain how employee's habits during working hours show the employee's credibility. In the classification of human activities, employee activity can be classified using videos or images of an employee's activities.

There are many human activities that can be classified, such as running, cycling, jumping, falling, walking, sitting, standing, climbing, using the telephone, and so on. Many tasks related to human activity classification and recognition have been carried out with excellent results using different modalities of datasets, accelerometer [1][2], gyroscope [2], motion sensor [3], video [4][5], and Doppler radar [6]. Different modalities in almost all research are caused by humans who continue to move dynamically and develop.

To the best of our knowledge, there is no research focusing on employee activities at work desks with vision-based datasets from several tasks related to activity classification that has been carried out. Therefore, in this research, we proposed a classification of employee's activity at work desks. We used one of the existing deep learning architectures, i.e. Residual Network (ResNet) [7], implementing 2d convolution with 34 layers and 50 layers. The residual network can recognize human activities such as archery, using makeup, crawling babies, pushups, punching, diving, etc. [4]. We also implement Cyclical Learning Rate (CLR) [8] to optimize the scheduling of our architectural training process. Using CLR, CNN's learning rate will not always be the same, but it can range from the minimum learning rate and the maximum learning rate.

This paper is organized as follows: Section 2 mentions some research conducted to classify and recognize the human activity. In Section 3, we explain the system built in this research. In Section 4, we present the experimental result and analysis. Finally, in Section 5, we conclude our experiment research.