ABSTRACT

The arch is the curve on the foot, the gap between the insole of the foot and the ground. The arch served as a protective leg againts injuries sustained by the force of the foot. The arch devides into three types, there is normal feet (normal arch), high (high arch foot), and flat foot. High arch foot and flat foot are involved in foot abnormality. The abnormality of foot was one aspect of the assessment of prospective Indonesian Republic of Police members. Therefore, in the selection process there was a physical examination of one of the prospective Indonesian Republic of Police foot parts. Currently, the process of physical examination of prospective members is still carried out by using a ruler to measure the length and width of the foot. The tread of the foot will be noted in the test registration document. To measure using this ruler would be an inaccurate value. This problem can be overcome with a foot - detecting system that can generate precise value. In this final project, it will be designed with a device that can identify into two feet (normal or abnormal feet) with the porpose of physical examination of prospective Indonesian Republic of Police members can get more accurate results.

In this final project, a hardware and software design, for which the hardware-flatyfoot can identify the curve of the foot, whereas for the software it uses to produce visual data from the system's scanning. The system is able to identify two types of feet there are normal and abnormal feet (flatfoot and high arch foot). It is a software based that uses deep learning by using selected architecture, which is ResNet 152 V2 of the CNN method that will be tested and used best for implementing the software. The deep learning process starts from the pre-processing, feature extraction, and classification.

In this study, we used quantitative methods. Based on this study, we have done a step up from deep learning, which is pre-processing, feature extraction, and classification. Based on it, performation measures would be 84,44%, which would indicate that the model system could go in accordance with the designed one.

Keyword : CNN, Deep Learning, Flatfoot, Foot Abnormality Detection, Indonesian Republic of Police, ResNet152V2.