

CHAPTER V CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

Based on the results and analysis that have been obtained in this study, it can be concluded that:

1. A classification device has been made and can function appropriately in classifying 17 fabric materials;
2. The results of the fabric materials classification were successfully sent to the database via API and displayed on the LCD;
3. The best model for classification is the YOLOv8 m series with epoch 25 with an accuracy of 98%;
4. Classification works well on light-colored fabrics but is slightly weak on dark-colored fabrics;
5. The regularity of the top surface of the fabric material affects the camera's magnification, and magnification affects the distance between the fabric and the camera;
6. The best microscope camera magnification to classify fabric materials in the value range of 1400-1500s.

5.2 Suggestions

1. Increase the dataset of fabric materials with various applications of the fabric material;
2. Add light absorption measurements so that users can weigh the functionality of the fabric;
3. Use a non-private microscope camera so that it can be used directly on the website;
4. Add additional LEDs to make dark colours more visible.

