

# Automated Optical Inspection

Company E is a textile company that applies AOI to detect a defect on fabric. In their case, AOI failed to overcome this problem because the Rule-based system used by company is not accurate enough. These different categories caused more than 90% of captured images are not detected (overkill). A Professional Inspector in the company reclassifies those overkill images into real defect and non-defect images. Our goal in this work is, to reduce a Professional Inspector working loads by producing deep learning models. This work implemented Autoencoder to reconstruct the dataset and CNN to classify image from AOI. The result shows that the models are able to reduce a Professional Inspector working loads up to 80% with maximum FNR 5% and FPR less than 15%.

**Keywords: defect, AOI, Autoencoder, CNN.**

