

## **ABSTRAK**

A system designed with an accurate and efficient model for scratch removal in images aims to assist anyone experiencing scratches in their images. Designing such a system is a challenging task, involving various aspects such as model accuracy, computational complexity, and more. Therefore, this research will utilize image segmentation for scratch detection and employ the Generative Adversarial Network (GAN) method for inpainting the damaged areas, specifically the scratches, in the images. The Generative Adversarial Network (GAN) method is a technique known for generating high-quality data, including images. The GAN method is an architecture model consisting of a Generator and a Discriminator. The Generator generates images, while the Discriminator distinguishes between the images generated by the Generator and the original images. The Generator in the model is liable for generating images that closely resemble the images in the training data. The Discriminator is responsible for attempting to differentiate between real images and images generated by the Generator. The inpainting results will be evaluated by calculating the Peak Signal to Noise Ratio (PSNR). Based on the results of these studies, the GAN method can perform image inpainting on images that have damaged areas. Result of evaluation, the average PSNR value in the CelebA dataset was 39 dB.

**Kata Kunci:** *image inpainting*, GAN, PSNR