GENERATIVE ADVERSARIAL NETWORK FOR ROAD DAMAGE DETECTION

In this paper, a progressive growing generative adversarial network with Poisson blending for artificially generating road damage images in improving performance was proposed. The paper claimed if the number of original images is small, then using that method F1 score can be improved by 5% and 2% for relatively large sample numbers.

The authors also updated the Road Damage Dataset 2018 (Maeda et al., 2018) to the Road Damage Dataset 2019 and made it available publicly. They show that this study improves pothole detection accuracy.

This study shows that their PG-GAN with Poisson blending can improve the F1 score on detecting potholes on roads.

Generative Adversarial Network has some drawbacks as well.

i. It's harder to train. The user needs to give various kinds of data uninterruptedly to verify if it is working accurately or not.

ii. Optimizing the loss function is very difficult.

REFERENCES

[1] Maeda, H., Kashiyama, T., Sekimoto, Y., Seto, T., & Omata, H. Generative adversarial network for road damage detection. Computer-Aided Civil and Infrastructure Engineering.