Sensor Applications

Multi-view Scene Image Inpainting Based on Conditional Generative Adversarial Networks

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Abstract—Multi-views systems have been widely used in robots, ADAS(Advanced Driver Assistance Systems), monitor systems and so on, using multi-views, the machine can better perceive the surrounding scenes. The exposed lens and the camera are easily contaminated by the outside, resulting in abnormal images. Image inpainting technology can utilize the prior information of the image structure, texture and other information provided by the surrounding pixels of the abnormal area to recover the damaged image, which can reduce the loss of visual information. Provide as much information as possible for the machine's decisions. In order to achieve the above purposes, considering the characteristics of multi-vision system, a novel image inpainting method is proposed. The basic idea is that using conditional generative adversarial networks(CGAN) to amend defect images, in which the priori condition is the synchronization frame from other cameras in different viewpoints. The generator in the CGAN is a autoencoder which has skip connected from encoder to decoder. We also integrate spatial transform networks, group convolution and channel switching technology in our network structure to fusion the multi-views information. Experimental results show that our method can achieve high quality image inpainting.

Index Terms—Image inpainting, generative adversarial networks, convolutional neural network, deep learning.

I. INTRODUCTION

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July 12, 2017

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II. CONCLUSION

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REFERENCES

[1] H. Kopka and P. W. Daly, *Guide to LaTeX*, 4th ed. Boston, MA: Addison-Wesley, 2004.

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