

# Style Transfer for Videos

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University of Dublin, Trinity College, 2020

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Recent advances in the field of Deep Learning have allowed the use of machines to generate beautiful looking artistic images. This study introduces the techniques to extend methods of unpaired image-image translation to video-video translation. A new temporal loss function is introduced which uses optical flow information from the original video to guide the model to learn temporal relationships among the video input. Generative Adversarial Network is used to transfer style from a set of images to a full video sequence while maintaining the consistency of the output video. The method is evaluated by calculating the temporal smoothness of the generated videos using an evaluation metric proposed in this study and comparing the results against prior methods.