Multi-model based two-stream framework for action recognition

A*StarTrek Team

INTRODUCTION

A Multi-model based two stream framework is proposed for action rection under the dark condition. Our proposed framework consists of two parts: frame enhencement and two-stream neural network.

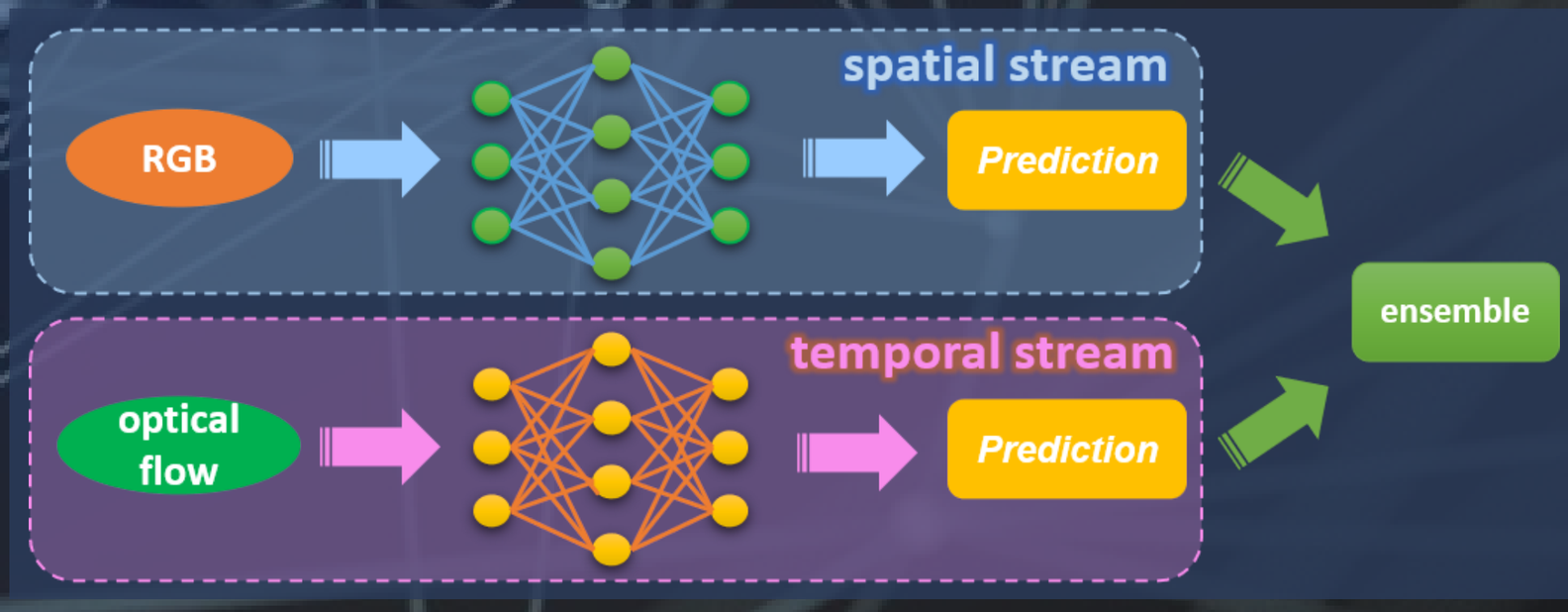
Frame Enhencement

Gamma Intensity Correction (GIC):

$$D(t,x,y)=I(t,x,y)^{(1/\gamma)}$$

where D(t,x,y) is the value of the pixel in the original frame at spatial location (x,y) at the t th frame, and I(t,x,y) is the pixel value in the processed frame. Both D(t,x,y) and I(t,x,y) are in the range of [0, 1]. y is the parameter that controls the degree of increasing pixel value, where a larger number would result in larger pixel values, improving the frame quality.

Two-stream neural network



Spatial Stream: SlowFast network
Temporal Stream: I3D inception v1 network

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