

GAN-based Photo Video Synthesis

Summary of Generating Videos with Scene Dynamics

Lei Zhang

CS 297

Introduction

- Train with unlabeled video
- Extend GAN to video
- Introduce a two-stream generative model that split foreground from the background, which to learn move and non-move objects respectively

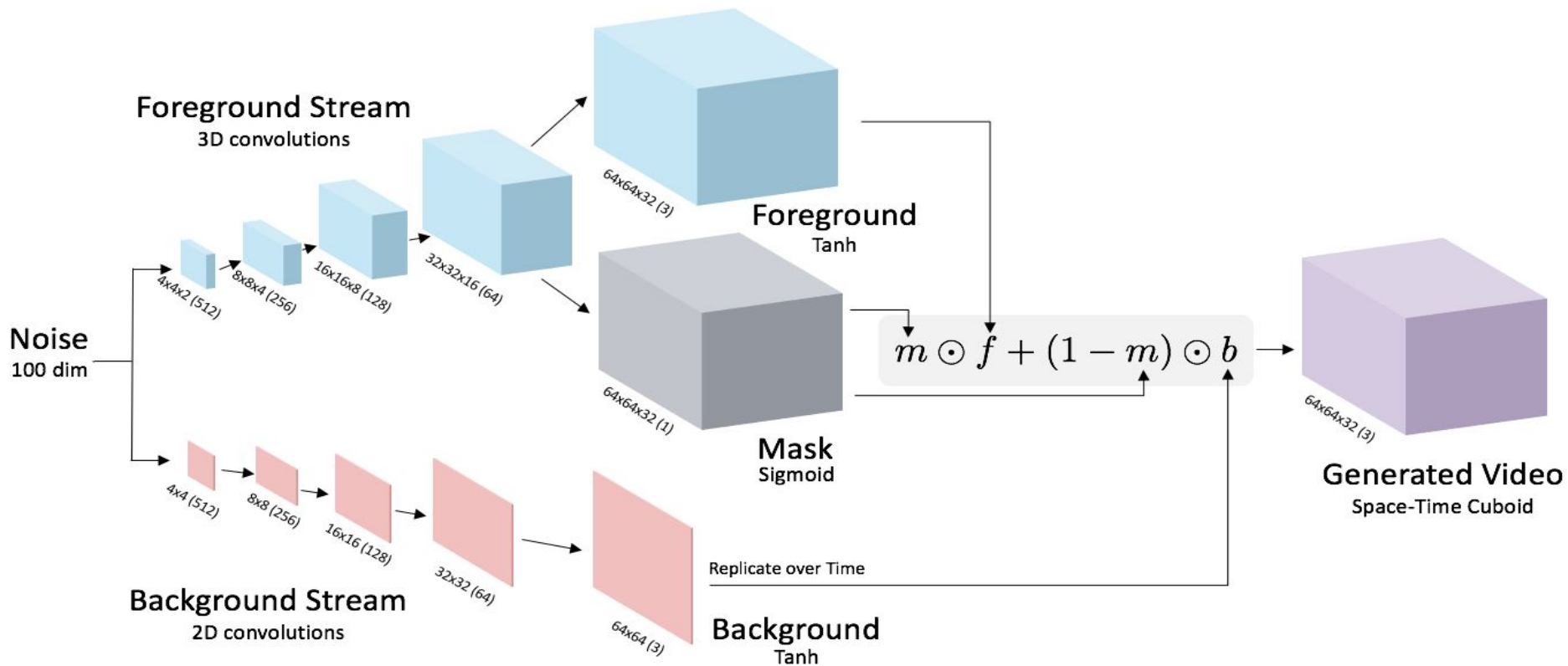


Discriminator

- Able to classify realistic scenes from synthetically generated scenes
- Able to recognize realistic motion between frames
- It uses five layer spatio-temporal convolutional network



Two Stream Video GAN



Future Generation

- Give a static image to extrapolate possible consequent frames
- To improve
 - Generate similar but not identical scenes
 - Only generate 1-2 seconds video



Future Generation with Plausible Motions



REFERENCE

[1] Vondrick, Carl, Hamed Pirsiavash, and Antonio Torralba. "Generating videos with scene dynamics." Advances In Neural Information Processing Systems. 2016.

