



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

Room 1 ,Ziskind Building
on Thursday, Jan 10, 2019
at 12:15

Roey Mechrez
Technion

Controlling the Latent Space at Inference Time

Abstract:

The common practice in image generation is to train a network and fix it to a specific working point. In contrast, in this work we would like to provide control at inference time in a generic way. We propose to add a second training phase, where we train an additional tuning block. The goal of these tuning blocks is to provide us with control over the output image by modifying the latent space representation. I will first present our latest attempt in the domain of generative adversarial, where we aim to improve the quality of the results using the discriminator information -- we name this adversarial feedback loop. Second, I will present Dynamic-Net, where we train a single network such that it can emulate many networks trained with different objectives. The main assumption of both works is that we can learn how to change the latent space in order to achieve a specific goal. Evaluation on many application shows that the latent space can be manipulated, such that, it allows us to have diversified control at inference time.

* Joint work with Firas Shama*, Alon Shoshan* and Lihi Zelnik Manor.