



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

on Thursday, Jul 30, 2020
at 12:15

Zoom:

<https://weizmann.zoom.us/j/96905267652?pwd=MGxhem1WVG1WbzRQSTVnYXZGLy81dz09>

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Semantic Pyramid for Image Generation

Abstract:

We present a novel GAN-based model that utilizes the space of deep features learned by a pre-trained classification model. Inspired by classical image pyramid representations, we construct our model as a Semantic Generation Pyramid - a hierarchical framework which leverages the continuum of semantic information encapsulated in such deep features; this ranges from low level information contained in fine features to high level, semantic information contained in deeper features. More specifically, given a set of features extracted from a reference image, our model generates diverse image samples, each with matching features at each semantic level of the classification model. We demonstrate that our model results in a versatile and flexible framework that can be used in various classic and novel image generation tasks. These include: generating images with a controllable extent of semantic similarity to a reference image, and different manipulation tasks such as semantically-controlled inpainting and compositing; all achieved with the same model, with no further training.

<https://arxiv.org/abs/2003.06221>

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