Noise Removal in 3D Point Clouds using Deep-Learning Techniques

The seminar will be given in Hebrew

A 3D point clouds is a set of 3D points belonging to a common coordinate system. Point clouds are used nowadays in a variety of fields such as robotics, navigation and reverse engineering. This rapid progression has increased the need for new efficient point cloud analysis algorithms.

Raw 3D point clouds obtained directly from acquisition devices such as laser are regularly contaminated with noise. This noise heavily effects any desired task that is later preformed on the point cloud.

We present a new approach to preform point cloud denoising. Our approach is deep-learning based and its uniqueness is that it does not require pairs of noisy and clean data. Instead, we assume that the label of the object described in the point cloud is given. The novel approach is demonstrated in PrepNet – a deep-learning architecture that learns to preform denoising on ModelNet40 point clouds.