

סמינריון

הנדך מוזמנות להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ה' 19.03.2020
(כ"ג באדר, תש"פ), בניין דן קאהן, אודיטוריום 1, 13:00.

מרצה: גל שטרית

מנחה: פרופ' ענת פישר

על הנושא:

Dimensions Extraction of Objects from Depth Images using Deep Learning Methods

The seminar will be given in Hebrew

תקציר ההרצאה:

In recent years, there is a large availability of high-quality and cheap 3D sensors (i.e. Intel RealSense). This data can be represented as a depth map which shows the visible areas of the object in the form of an image, where each pixel has, additionally to color, a depth value.

In this work, we demonstrate a deep learning algorithm capable of automatically extracting the physical dimensions of an object in a depth image.

Due to the similarities between depth image and regular 2D images, the algorithm leverages the architecture of CNNs for 2D images, such as Resnet, in order to extract the dimensions.

First, a depth image containing an object of interest is input to the algorithm. In the second stage, Mask R-CNN segments the object of interest and breaks it into simple known features such as cylinders and boxes. Later, the segmented features are fed into DEN (dimension extraction network) which is based on ResNet. The DEN and Mask R-CNN were trained using novel synthetic depth dataset of mechanical parts in complex scenes.

בברכה,

פרופ' נ"א אתי סאס

מרכז הסמינרים