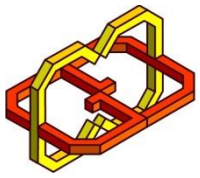

Technion-Israel Institute of Technology

Computer Science Department

Center for Graphics and Geometric Computing

CGGC Seminar – PhD Talk

Prof. Tatsuya Yatagawa

School of Engineering, The University of Tokyo

Deep Learning for Surface Geometries and Its Applications

Deep learning has been one of the most common techniques in many industrial and research fields, and that for processing 3D geometries has also been investigated intensely in the last several years.

However, compared to the techniques for 3D volumetric images and point sets, those for surface geometries, e.g., represented by triangular meshes, have not been well established due to the difficulty in handling spatial and topological features simultaneously using a neural network. In our talk, the first part introduces several common approaches to overcoming the above problem to define a convolution operation on the surface geometry, including both tessellation-aware and tessellation-agnostic approaches. In the second part, we will introduce our recent research on denoising polygonal meshes using graph convolutional neural networks. The proposed technique does not rely on large-scale training datasets and works with only noisy input mesh. The independence from training datasets allows the proposed method to be applied to a range of shapes uncommon in typical shape datasets.

The lecture will be held on Monday, 24.10.2022, at 13:30, Taub 401

הזמנה זו מהווה אישור כניסה עם רכב לטכניון