



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

Room 290C ,Ziskind Building
on Tuesday, Dec 05, 2017
at 11:00

NOTE UNUSUAL DAY AND TIME

Amit Bermano
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Geometry Processing Methods and Their Real-Life Applications

Abstract:

Digital geometry processing (DGP) is one of the core topics of computer graphics, and has been an active line of research for over two decades. On one hand, the field introduces theoretical studies in topics such as vector-field design, preservative maps and deformation theory. On the other hand, the tools and algorithms developed by this community are applicable in fields ranging from computer-aided design, to multimedia, to computational biology and medical imaging. Throughout my work, I have sought to bridge the gap between the theoretical aspects of DGP and their applications. In this talk, I will demonstrate how DGP concepts can be leveraged to facilitate real-life applications with the right adaptation. More specifically, I will portray how I have employed deformation theory to support problems in animation and augmented reality. I will share my thoughts and first taken steps to enlist DGP to the aid of machine learning, and perhaps most excitingly, I will discuss my own and the graphics community's contributions to computational fabrication field, as well as my vision for its future.

Bio: Dr. Amit H. Bermano is a postdoctoral Researcher at the Princeton Graphics Group, hosted by Professor Szymon Rusinkiewicz and Professor Thomas Funkhouser. Previously, he was a postdoctoral researcher at Disney Research Zurich in the computational materials group, led by Dr. Bernhard Thomaszewski. He conducted his doctoral studies at ETH Zurich under the supervision of Prof. Dr. Markus Gross, in collaboration with Disney Research Zurich. His Masters and Bachelors degrees were obtained at The Technion - Israel Institute of Technology under the supervision of Prof. Craig Gotsman. His research focuses on connecting the geometry processing field with other fields in computer graphics and vision, mainly by using geometric methods to facilitate other applications. His interests in this context include computational fabrication, animation, augmented reality, medical imaging and machine learning.