מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

Room 141 ,Ziskind Building
on Monday, Mar 28, 2016
at 11:00

PLEASE NOTE UNUSUAL ROOM, DAY and TIME.

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Stretchable non-rigid structures

Abstract:

Geometrical understanding of bendable and stretchable structures is crucial for many applications where comparison, inference and reconstruction play an important role. Moreover, it is the first step in quantifying normal and abnormal phenomena in non-rigid domains. Moving from Euclidean (straight) distances towards intrinsic (geodesic) measures, revolutionized the way we handle bendable structures, but did not take stretching into account. Human organs, such as the heart, lungs and kidneys, are great examples for such models. In this lecture I will show that stretching can be accounted for in the atom (local) level, in a closed form using higher derivatives of the data. I further show that invariants can play a critical part in modern learning systems, used for statistical analysis of non-rigid structures, and assist in fabricating soft-models. The lecture will be self-contained and no prior knowledge is needed.