



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

Room 1 ,Ziskind Building
on Thursday, Dec 01, 2016
at 12:15

Michael (Miki) Lustig
University of California, Berkeley

Applications of Subspace and Low-Rank Methods for Dynamic and Multi-Contrast
Magnetic Resonance Imaging

Abstract:

There has been much work in recent years to develop methods for recovering signals from insufficient data. One very successful direction are subspace methods that constrain the data to live in a lower dimensional space. These approaches are motivated by theoretical results in recovering incomplete low-rank matrices as well as exploiting the natural redundancy of multidimensional signals. In this talk I will present our research group's efforts in this area. I will start with describing a new decomposition that can represent dynamic images as a sum of multi-scale low-rank matrices, which can very efficiently capture spatial and temporal correlations in multiple scales. I will then describe and show results from applications using subspace and low-rank methods for highly accelerated multi-contrast MR imaging and for the purpose of motion correction.