Large-scale machine learning for understanding images: or How to feed a dinosaur and catch him by the tail

ELSC cordially invites you to the lecture given by:

Gal Chechik

The Gonda brain research center, Bar Ilan University

on the topic of:

Large-scale machine learning for understanding images: or How to feed a dinosaur and catch him by the tail

The lecture will be held on Thursday December 29th, at 17:00

at ELSC: Silberman Bldg., 3rd Wing, 6th Floor,

Edmond J. Safra Campus

Light refreshments served at 16:45

Abstract:
There has been a tremendous progress recently in learning to recognize visual objects and annotating images, driven by super-rich models and massive datasets. However, machine vision models still have a very limited 'understanding' of images, rendering them brittle when required to generalize to unseen examples. I will describe recent efforts to improve the robustness and accuracy of learning systems for annotating and retrieving images. First by using structure in the space of images, and fusing various types of information about image labels. Second, by matching
structures in visual scenes to structures in their corresponding language descriptions or queries. Third, by using context to focus learning on the most relevant component of an image.

**Bio:**
Gal Chechik is an Assoc Prof at the Gonda brain research center, Bar-Ilan University, Israel, and a senior research scientist at Google. His work focuses on learning in brains and in machines. Specifically, he studies the principles governing representation and adaptivity at multiple timescales in the brain, and algorithms for training computers to represent signals and learn from examples. Gal earned his PhD in 2004 from the Hebrew University, working with Naftali Tishby and Israel Nelken, developing machine learning and probabilistic methods to understand the auditory neural code. He then studied computational principles regulating molecular cellular pathways as a postdoctoral researcher at the CS dept in Stanford. In 2007, he joined Google research as a senior research scientist, developing large-scale machine learning algorithms for machine perception. Since 2009, he heads the computational neurobiology lab at BIU and was appointed an associate professor in 2013. He was awarded a Fulbright fellowship, a complexity scholarship and the Israeli national Alon fellowship. [http://chechiklab.biu.ac.il/](http://chechiklab.biu.ac.il/)
The talk will cover work he has done in 2015-2016 while on sabbatical at Google Research Mountain View CA.

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