



## סמינר משתלמים - Graduate Seminar Pixel Club

You are invited to attend a lecture by

הנכם מוזמנים להרצאה של

**Naama Hait\***

Dept. of Electrical Engineering  
Technion

בנושא:

### Model-based Transrating of Coded Video

Transrating of coded video is the process of reducing the bit rate of a high-quality pre-encoded video to match user-specific bit rate requirement. In this work, we examine model-based transrating via requantization in the state of the art H.264 coder. Previous works, related to previous standards, chose the optimal requantization steps via an iterated Lagrangian optimization that minimizes the distortion subject to a rate constraint. However, these works evaluated the rate in each iteration and therefore required an exhaustive search at a high computational load. Moreover, these methods cannot be applied for requantization in H.264 as is, due to its advanced coding features.

We propose to incorporate models into the optimal requantization to alleviate its computational burden. To this end, we developed modified macroblock-level models adapted for requantization in H.264. To achieve a smooth quality, large frequent changes in the quantization steps should be avoided. An extended Lagrangian optimization was developed to meet this demand during inter-coded frame transrating. The spatial prediction in H.264 intra-coded frames introduces block dependencies. We suggest a novel statistical-based model for estimating the relation between the rate and the requantization step, which overcomes the dependency problem.

M.Sc. Research under the supervision of Prof. David Malah.

סטודנטית לתואר שני בהנחיית פרופסור דוד מלאך.

The lecture will take place on Tuesday, 5/6/2007  
at 11:30 in room 1061  
Electrical Eng. Building  
Technion City

ההרצאה תתקיים ביום שלישי, 5/6/2007  
בשעה 11:30 בחדר 1061  
בבניין הפקולטה להנדסת חשמל  
קריית הטכניון

כיבוד קל יוגש לפני ההרצאה

