



Signal Processing and Systems (SP&S) Seminar

You are invited to attend a lecture by

הנכם מוזמנים להרצאה של

Yevgeny Priziment*

Department of Electrical Engineering
Technion

בנושא :

Modeling and Rate Control in Reversed Complexity Video Coding Systems

Distributed Video Coding (DVC) is a novel coding scheme which employs principles of lossy source coding with side information (SI) at the decoder. The DVC framework enables to shift the computational load of motion estimation from the encoder to the decoder, resulting in reversed encoder-decoder complexity. This reversed complexity scheme could be appealing for applications in which the encoder is power and/or complexity constrained.

In this work we focus on two problems: the source-SI joint distribution modeling and the rate allocation. First, we focus on stationary models and demonstrate the superiority of a Gamma based model. In addition, we suggest a new spatially adaptive model, which enables to follow the varying joint statistics of the source and SI. Methods for model parameters estimation are also presented. Next, we propose an encoder-side rate control module instead of the typical feedback-based decoder-side approach. This module estimates the joint statistics and feeds them to a rate distortion function. Moreover, in order to exploit the spatially varying statistics, we suggest performing intra frame rate allocation. We evaluated the developed models using standard and aerial video sequences. The aerial video is accompanied by metadata describing the global motion in the sequence. Using this metadata makes the joint statistics estimation process less complex and more reliable.

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

* סטודנט לתואר שני בהנחיית פרופ' דוד מלאך.

The lecture will take place on Wednesday, 17/2/2010
at 13:30 in room 1061
Electrical Eng. Building
Technion City

ההרצאה תתקיים ביום רביעי, 17/2/2010
בשעה 13:30 בחדר 1061
בבניין הפקולטה להנדסת חשמל
קריית הטכניון

כיבוד קל יוגש לפני תחילת ההרצאה

הזמנה זו מהווה אישור כניסה עם רכב לטכניון

