הפקולטה להנדסת חשמל
אלקטרוניקה
מחשבים
תקשורת

הטכניון - מכון טכנולוגי לישראל

# סמינר משתלמים

הנכם מוזמנים להרצאתה של
**זויה לנדה***

You are invited to attend a lecture by
**Zoya Landa***

בנושא:

## 2d Object Description and Recognition Based on Contour Matching by Implicit Polynomials

We present several techniques for improving 2D object description and recognition based on implicit polynomials (IP). We first improve the description abilities of the minMax and minVar algorithms (A. Helzer, M. Barzohar, D. Malah, 2004) by replacing algebraic distances by geometric ones in a cost function used by these algorithms. Since a polynomial of a predetermined degree fails to classify objects in a data-base that contains both simple and complicated shapes. We propose a classification approach that is based on fitting several polynomials to the object shape, each having a different degree. This multi-degree approach is shown to be more efficient for classification.

A major issue in classifying 2D objects is that they may have undergone an Affine transform, relative to the corresponding object in the data-base. We first apply linear rotation invariants that are based on the polynomial coefficients (Tarel et. Al. 1998) and modify accordingly the multi-degree minMax and minVar algorithms. We then propose a Shape Transform, based on the Scatter Matrix of a shape, which transforms each object to its "Mother Shape". This way, by carrying out the fitting and classification on mother-shapes, using the above rotation invariants, extends the invariance to Affine transforms as well. Simulation results show the advantage of this approach over the popular Curvature Scale Space (CSS) classification technique.

* M.Sc. Research under the supervision of Prof. David Malah and Dr. Meir Barzohar.

* סטודנטית לתואר שני בהנחיית פרופ' דוד מלאך ודר' מאיר בר-זוהר

ההרצאה תתקיים ביום ב' 1.5.2006
בשעה 11:30 בחדר 1061
בבניין הפקולטה להנדסת חשמל
קריית הטכניון

The lecture will take place
On Monday, 1.5.2006 at 11:30
in Room 1061 Electrical Eng. Building
Technion City

כיבוד קל יוגש לפני ההרצאה

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