



Pixel Club (סמינר משתלמים)

You are invited to attend a lecture by

הנכם מוזמנים להרצאה של

Hilla Ben-Yaacov*

Dept. of Electrical Engineering
Technion

בנושא:

3D Objects Description and Classification by Implicit Polynomials

Implicit polynomials (IP) are used for the representation of 2D curves and 3D surfaces specified by discrete data. We explore the description abilities of existing 3D implicit polynomials fitting algorithms, Gradient1, MinMax and MinVar, and suggest a modification for the MinMax and MinVar algorithms, so that they will be rotation invariant. We develop a set of 3D rotation invariants that are linear combinations of the IP coefficients, using a tensor representation of the IP, and two 3D quadratic rotation invariants. We describe the pre-processing stages required in order to improve the classification performance, and present a 3D classification method that is based on the 2D Multi Order and Fitting Errors Technique (MOFET). The classification features we use are the 3D IP rotation invariants and fitting errors, as well as 2D IP rotation invariants and fitting errors, derived from the most informative 2D projections of the 3D objects. Simulation results show that our method outperforms classification based on an IP fitting after pose estimation as well as the Shape Spectrum Descriptor (SSD) classification, which was adopted by the MPEG-7 standard.

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

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

The lecture will take place on Tuesday, 10/6/2008
at 11:30 in room 1061
Electrical Eng. Building
Technion City

ההרצאה תתקיים ביום שלישי, 10/6/2008
בשעה 11:30 בחדר 1061
בבניין הפקולטה להנדסת חשמל
קריית הטכניון

כיבוד קל יוגש לפני ההרצאה

