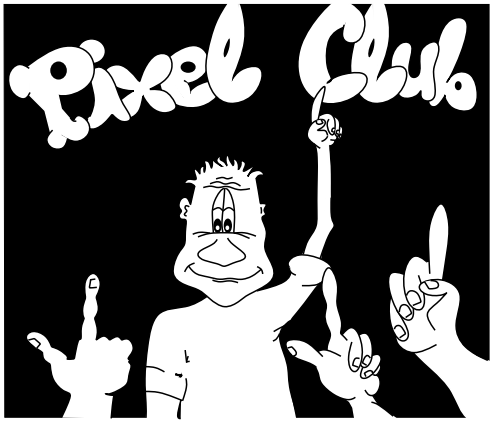

TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY

Department of Electrical Engineering
Department of Computer Science

You are invited to a talk by

Reuven Franco
Department of Electrical Engineering, Technion

Rate, Distortion, and Complexity Tradeoffs in Fractal Image Coding[1]

Fractal representation is a promising image coding technique, providing a good reconstruction quality at high compression ratios. This coding technique is based on finding self-similarities in the image, between different areas of different sizes, under a predefined transformation type. The task of finding self-similarities is of high computational complexity. Most of the research dealing with fractal image coding is aimed at trying to solve this major drawback.

In this work, the different relationships between rate, distortion and complexity were examined for different algorithms in order to reduce the computational complexity and the reconstruction error. It is well known that coding efficiency can be improved by using adaptive image partitioning methods such as the well-known Quadtree partitioning. In the described work a variety of partitioning criteria into various shapes were tested resulting in a new adaptive coding algorithm under complexity and rate constraints. Other issues that will be discussed are combining matching pursuit and vector quantization with fractal image coding. Simulation results will be presented.

The lecture will take place
on Tuesday, 10th of August 1999, at 14:30
in the Seminars Room, Mayer 1061,
Department of Electrical Engineering

[1]This talk is based on the MSc thesis of the speaker, under the supervision of Prof. David Malah