

Lecture 1: Introduction to recognition

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EE/CNS148 - Spring 1999

1 Introduction to visual recognition

- The problem of recognizing objects and ‘visual properties’ in images.
- Industrial applications: indexing into image databases, biometrics, product inspection, automatic classification of visual patterns.
- Object recognition vs class recognition. Multiple levels of ambiguity tolerated.
- Visual vs cognitive aspects. The importance of context and function.
- Role of learning. Indexing into large databases.
- Visual recognition as a pattern recognition problem.
- Peculiarities of visual recognition:
 1. Invariance w.r. to point of view, lighting, deformations
 2. Segmentation from background
 3. Combinatorial aspects
 4. Extracting features from images
 5. Cues to recognition: color, silhouette, texture, localized features...
- Overall structure of the ‘recognition machine’.

2 Overview of CNS/EE148