

Department of Applied Mathematics and Statistics
The Johns Hopkins University

SEMINAR

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March 13, 2008
304 Whitehead Hall
Refreshments: 3:30 p.m.
Seminar: 4:00 p.m.

STATIONARY FEATURES AND CAT DETECTION

ABSTRACT

Semantic scene interpretation is one of the most challenging problems in computer vision. Most algorithms for detecting and describing instances from object categories consist of looping over a partition of a “pose space” with dedicated binary classifiers. This strategy is inefficient for a complex pose: fragmenting the training data severely reduces accuracy, and the computational cost is prohibitive due to visiting a massive pose partition. To overcome data-fragmentation I will discuss a novel framework centered on pose-indexed features, which allows for efficient, one-shot learning of pose-specific classifiers. Such features assign a response to a pair consisting of an image and a pose, and are designed so that the probability distribution of the response is invariant if an object is actually present. I will illustrate these ideas by detecting and localizing cats in highly cluttered greyscale scenes.

(This is joint work with François Fleuret.)