

SEMINAR NOTICE

Department of Electrical and Systems Engineering

ROBUSTNESS ANALYSIS IN AUTOMATIC OBJECT RECOGNITION

by

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We look at the problem of finding the robust mean estimator for a convex family of distributions defined as those whose relative entropy, relative to a nominal distribution, is less than a threshold. This requires finding the worst-case distribution in this family and designing a robust estimator based on this distribution. The worst-case distribution is selected as the one whose Fisher information for the mean of the distribution is the lowest. This problem is connected to a penalized maximum likelihood estimation problem. We present a novel algorithm for computing this worst-case (robust) distribution, show implementation results and analyze properties of the robust distribution. An M-estimator derived from this worst-case distribution then minimizes the maximum asymptotic variance. Experiments were carried out to verify the minimax property of this M-estimator.

DATE: Friday, August 3, 2007
TIME: 2:30 p.m.
PLACE: Bryan Hall, Room 305

Thesis advisor:
Prof. Joseph O'Sullivan

This seminar is in partial fulfillment
of the Doctor of Philosophy Degree