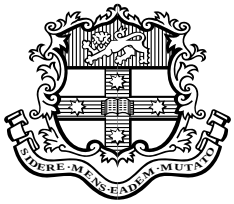

UNIVERSITY OF SYDNEY

SCHOOL OF MATHEMATICS AND STATISTICS

Statistics Seminar

Friday, 8 September, 2.00pm

Eastern Avenue Lecture Theater

On the nonparametric maximum likelihood estimation of log-concave densities

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Abstract

One often wishes to model observations as coming from a density that is in some sense smooth. A common choice is the class of unimodal densities. However estimation of such densities is problematic in that certain tuning parameters need to be chosen by the practitioner and while there is much theory on how such choices might be made, rarely is the procedure completely automatic. However if one restricts the class slightly to densities whose logarithm is a concave function, then a unique nonparametric maximum likeihood estimator (NPMLE) exists which in particular requires no choice of tuning parameters. We provide an introduction to the theory and computation of such estimates, discuss some applications in bump-hunting and clustering and present some new results on rates of convergence.

Enquiries about the Statistics Seminar should be directed to
Marc Raimondo (`marcr@maths.usyd.edu.au`)