

Workshop on Sparsity and its application to large inverse problems.
Robinson College, Cambridge University, Cambridge UK.
December 14-15, 2008

Abstract:

The aim of this workshop will be to draw together much of the recent work on algorithms which encourage sparsity, such as the minimisation of cost functions involving L_p -norms (typically $0 \leq p < 2$), with good methods for solving inverse problems on large datasets such as high-resolution images and 3D data. Usually such problems must be solved iteratively and there is a great need to ensure rapid convergence if the dataset is large, in order to avoid long computation times. Of particular interest are a number of recent papers on fast solutions to L_1 -minimisation problems and also on iterative threshold reduction methods that allow good solutions to be found to the non-convex L_0 -minimisation problem. Within the iterative context, it is also possible to adjust the weighting functions for terms in an L_2 -minimisation so that it approximates an L_1 or L_0 minimisation process.

In addition to well-known applications such as image deconvolution, there are strong links between this work and the emerging field of compressed sensing. The proposed workshop will discuss the above problem areas and attempt to unify the fairly diverse set of techniques that are currently being used into a more fundamental framework. The workshop will include two plenary talks -Prof. Rich Baraniuk of Rice University is the first confirmed plenary speaker – oral presentations and a poster session.

Prospective authors are invited to submit a one-page extended abstract with references to p.dragotti@imperial.ac.uk, by 6-October-2008.

Dates: Sunday 14th and Monday 15th December 2008.

Location: Robinson College, Cambridge University, Cambridge UK.

Registration is free and includes meals and dinner on Sunday in the Old Kitchen at Trinity College, Cambridge.

Accommodation: Robinson College, (£63+VAT per night)