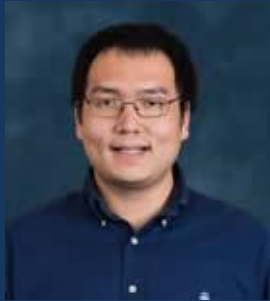


Department of Applied and Computational Mathematics and Statistics Colloquium



Jian Kang

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Scalar-on-Image Regression via the Soft-Thresholded Gaussian Process

This work concerns spatial variable selection for scalar-on-image regression. We propose a new class of Bayesian nonparametric models and develop an efficient posterior computational algorithm. The proposed soft-thresholded Gaussian process provides large prior support over the class of piecewise-smooth, sparse, and continuous spatially-varying regression coefficient functions. In addition, under some mild regularity conditions the soft-thresholded Gaussian process prior leads to the posterior consistency for parameter estimation and variable selection for scalar-on-image regression, even when the number of predictors is larger than the sample size. The proposed method is compared to alternatives via simulation and applied to an electroencephalography study of alcoholism. This is joint work with Brian J. Reich and Ana-Maria Staicu.

Friday, April 13, 2018
4:15 PM – 5:15 PM
127 Hayes-Healy Center

Colloquium Tea 3:45 PM to 4:15 PM 154 Hurley Hall