Accepted Manuscript

Bayesian mode regression using mixtures of triangular densities

Chi-san Ho, Paul Damien, Stephen Walker

PII: S0304-4076(16)30218-4
DOI: http://dx.doi.org/10.1016/j.jeconom.2016.11.006
Reference: ECONOM 4331

To appear in: *Journal of Econometrics*

Received date: 9 February 2016
Revised date: 1 October 2016
Accepted date: 16 November 2016

Please cite this article as: Ho, C.-s., Damien, P., Walker, S., Bayesian mode regression using mixtures of triangular densities. *Journal of Econometrics* (2016), http://dx.doi.org/10.1016/j.jeconom.2016.11.006

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Bayesian Mode Regression using Mixtures of Triangular Densities

Chi-san Ho, Senior Data Scientist, Capital One Bank

Paul Damien, Professor, McCombs School of Business, University of Texas at Austin[1]

Stephen Walker, Professor, Department of Mathematics, University of Texas at Austin

Abstract

Bayesian semiparametric models for mean and median regressions abound, but a void for mode regressions exists. We fill this gap by nonparametrically modelling the error distribution in such regressions that entails constructing prior distributions on densities which exhibit flexibility, while fixing the mode at 0. Such priors exist when constraining the mean and median but, to our knowledge, there is none for the mode. Our solution with mixtures of triangular distributions results in a conditionally conjugate prior on the space of unimodal, untruncated, convex densities. Consistency properties of the resulting modal estimators are studied, followed by simulated and real data illustrations.

JEL Classification Code: C1

Keywords: Bayesian Inference, Conditional Modes, Convex Densities, Mixture Distributions

[1]Paul Damien, 2110 Speedway, Stop B6500, Austin, TX 78712, Fax: (512) 471-0587, Phone: (512) 232-9461, *Paul.damien@mccombs.utexas.edu*

Download English Version:

https://daneshyari.com/en/article/5095521

Download Persian Version:

https://daneshyari.com/article/5095521

Daneshyari.com