

Strategy for node positioning for penalized spline regression

Gabriel Edson Sousa da Silva ¹, Matheus Costa da Silva ², Ernandes Guedes Moura ³,
Luíz Leonardo D. Garcia ⁴

Abstract: *We present a new method of node selection for P-spline curves. This method performs a grid search to determine nodes that maximize the correlation at each iteration. The results guide the selection of the nodes in a penalized spline regression model. The simulation shows that our method is more parsimonious.*

Keywords: Nonparametric regression; Semiparametric regression; Penalized splines; Knot placement.

¹IFMA-Instituto Federal do Maranhão. e-mail: gabrielssousasjp@gmail.com

²IFMA-Instituto Federal do Maranhão. e-mail: matheusifsp@gmail.com

³IFMA-Instituto Federal do Maranhão. e-mail: ernandes.moura@ifma.edu.br

⁴IFMA-Instituto Federal do Maranhão. e-mail: luiz.garcia@ifma.edu.br