Abstract

“Objective Bayesian model selection in the Cox model”

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There is now a large literature on objective Bayesian model selection in the linear model based on the g-prior. The methodology can be extended to generalized linear models using test-based Bayes factors (Johnson, Scandinavian Journal of Statistics, 35, 2008, Hu and Johnson, JRSSB, 2009). In more recent work, empirical and fully Bayes approaches to estimate g have been proposed and linked to commonly used shrinkage estimates from the literature (Held, Sabanès Bovè and Gravestock, 2015, Statistical Science, to appear). In this talk we extend the methodology to the Cox proportional hazards model and illustrate the approach with the development of a clinical prediction model for future cardiovascular events in the SMART study. A bootstrap study will be reported to compare the predictive performance with alternative approaches based on the integrated Brier score and Harrell's c-Index.

This is joint work with Isaac Gravestock