

Nonparametric regression using partial least squares dimension reduction in multistate models

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Abstract

We introduce a method of constructing non-parametric regression estimators of state occupation probabilities in a multistate model. In order to tackle potentially large number of predictors in modern genomic and proteomic data sets we use partial least squares to compute estimated latent factors from the transition times along with the covariates which are then used in an additive model in order to avoid curse of dimensionality. We illustrate the methodology using simulated and real data sets.