Boosting first-hitting-time models for time-to-event analysis

A seminar by Riccardo De Bin

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Room Benvenuti and live Zoom
Department of Statistical Sciences

In this talk we show how to extend the applicability of first hitting time models to high-dimensional frameworks, based on a gradient boosting approach. Based on an underlying stochastic process, first hitting time models do not require the proportional hazards assumption, hardly verifiable in the high-dimensional context, and represent a valid parametric alternative to the Cox model for modelling time-to-event responses. First hitting time models are easy to interpret and offer a natural way to integrate low- and high-dimensional information in a prediction model, that avoids complicated weighting schemes typical of current methods. Applications to cancer and battery data are presented.

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