MEDICAL UNIVERSITY OF VIENNA

Wiener Biometrische Sektion
der Internationalen Biometrischen Gesellschaft
Region Österreich – Schweiz

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RICCARDO DE BIN

Department of Mathematics,
University of Oslo, Norway

BOOSTING FIRST-HITTING-TIME MODELS FOR TIME-TO-EVENT ANALYSIS

October 21st, 2024 at 10:00 am

Seminarraum, Center for Medical Data Science,
Spitalgasse 23, Room 88.03.513
Medical University of Vienna, 1090 Wien

HOST: Florian Frommlet, Georg Heinze

ABSTRACT

In this talk we exploit gradient boosting to extend the applicability of first hitting time models to high-dimensional frameworks. First hitting time models define the time-to-event as the first time an underlying stochastic process reaches a boundary, and represent a valid parametric alternative to the Cox model. In particular, we focus on models based on the Weiner and Gamma Processes. We also show how first hitting time models also offer a natural way to integrate low-dimensional clinical and high-dimensional molecular information in a prediction model, that avoids complicated weighting schemes typical of current methods. The performance of our novel boosting algorithms are illustrated in real data examples.