

Estimating the effect of covariates on the correlation between bivariate failure times.

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Abstract: The correlation between two time-to-event outcomes, such as the composite endpoint of event-free survival and the terminal endpoint of overall survival, can be estimated as an overall measure for a study population. However, this correlation may vary based on the underlying clinical and genomic characteristics of the patient. In this talk, we propose a nonparametric regression approach to estimating and visualizing the correlation of the bivariate failure times across the covariate space. The operating characteristics of this approach are evaluated using a simulation study, and the methodology is illustrated in two cancer data sets.