LINEAR REGRESSION MODELING OF INTERVAL-CENSORED SURVIVAL TIMES BASED ON A CONVEX PIECEWISE-LINEAR CRITERION FUNCTION

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Abstract

Regression models of censored survival data are often required to handle the cases, where information on the dependent (response) variable is only available as intervals, within which the actual values are located. We report on implementation and some preliminary tests of a new general method for regression with an interval-censored response variable. This method is based on minimization of a convex piecewise-linear (CPL) criterion function introduced earlier for perceptron-type classifier design. The presented interval regression method (CPL- IR) can handle arbitrary pattern of exact and left-, right-, or interval-censored data in one flexible computational framework.

Keywords: interval regression, interval censoring, censored data, current-status data, survival time, CPL function