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Construction of Tree-Structured Prediction Model Based on Interval-Valued Covariates

The survival tree, which is constructed using the CART is considered in this study. In our proposed model, covariates can be assumed as interval-valued symbolic variables. The model allows that a concept can be included in several terminal nodes in a tree-structured model. Then, the prediction of a new concept will be constructed by using all terminal nodes based on observed frequency of the concept included in each terminal node. We present the application results of the proposed approach based on covariates obtained by MRI to patients with brain metastases from breast cancer to show the utility of the model.