On the Creation of the BeSiVa Algorithm to Predict Voter Support

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Abstract

An algorithm was created for a political campaign in Fall 2014 to help find the best way to take voter data and use it to predict the likelihood of voter support. Survey workers collected individual surveys from potential voters in the 2014 Kansas Second House District race. Surveys were matched against data provided by the party in an attempt to predict candidate support.

This thesis compares different classifying methods that can narrow down relevant independent variables to the algorithm developed in part with input from the client, known as the Best Subset with Validation Algorithm (or BeSiVa). BeSiVa focuses on choosing independent variables based on prediction rates in a separated pseudo-test set. With a percent correctly predicted comparable to the other methods, BeSiVa dealt with missing data, created a more interpretable model with fewer predictors, and predicted support with a comparable accuracy to other methods on bootstrapped subsets of campaign data.