

1. Fit model on training set using ensemble method like random forests.
2. Fit model to test set. Get estimates for each sample from each tree. Calculate mean and variance of each estimate.
3. Construct new y matrix consisting of original y, mean, and 1/variance, which is alpha in Rob's notation.
4. Either estimate  $\lambda$  from GCV or use Rob's node specific  $\lambda$ . The node specific  $\lambda$  is  $\sigma_z^2/(n\bar{\alpha}(c_\nu - \hat{\bar{Z}})^2)$ . Estimate  $c_\nu$  as the node specific mean and  $\sigma_z^2$  as the node specific variance. Then  $n$  is the number of samples in the node,  $\bar{\alpha}$  is the average of the  $\alpha$ s in the node, where each  $\alpha$  is the inverse of the variance of the tree predictions, and  $\hat{\bar{Z}}$  is the average of the ensemble estimates in the node.