

On random forests and other averaging classifiers

(based on joint work with Gerard Biau and Luc Devroye)

Gabor Lugosi

In the last years of his life, Leo Breiman promoted random forest for use in classification. He suggested using averaging as a means of obtaining good discrimination rules. The base classifiers used for averaging are simple and randomized, often based on random samples from the data. He left a few questions unanswered regarding the consistency of such rules. In this talk we establish the universal consistency of averaging rules.

We also show that some popular classifiers, including one suggested by Breiman, are not universally consistent.