

ABSTRACT

Support vector machines (SVMs) are a new nonparametric tool used for regression estimation. It is a new and very promising classification technique developed by Vapnik and his group at AT&T Bell Laboratories. The main idea behind the technique is to separate the classes with a surface that maximizes the margin between them. An interesting property of this approach is that it is an approximate implementation of the Structural Risk Minimization (SRM) induction principle which is an inductive principle that aims at minimizing a bound on the generalization error of a model, rather than minimizing the Mean Square Error over the data set (as Empirical Risk Minimization methods do).

We will use this tool to estimate the parameters of a GARCH model for predicting the conditional volatility of stock market returns. GARCH models are usually estimated using maximum likelihood (ML) procedures, assuming that the data are normally distributed. Here we show that GARCH models can be estimated using SVMs and that such estimates have a higher predicting ability than those obtained via common ML methods.