The Multivariate Adaptive Regression Splines (MARS) technique is a non-parametric regression technique introduced by Jerome H. Friedman of Stanford University in a famous paper bearing the name of the technique (Friedman, 1991, Vol. 19, No 1.). Like all regression techniques, it seeks to estimate the relationship amongst various variables. However, the MARS technique seeks to estimate the relationship of high dimensional data with strong nonlinearities in a manner that is both computational reasonable as well as with an easily understandable output.

The MARS technique differs in its novel application of regression splines in the form of hinge functions.

Broadly speaking, a “spline” is simply a function constructed in various segments from other polynomial functions (Racine, 2012). The MARS technique constructs these splines via hinge functions, which can be represented in the form

H[+-(x-t)], where H[n] indicates to take the positive part.

The value value x corresponds to the value of the variable x and t is a constant, referred to as a “knot”. This technique