Jang [23] introduced ANFIS, which is a hybrid model that combines fuzzy logic and NNs.The adaptation methods of most fuzzy inference systems rely on the back–propagation algorithm that is applied to deal with parameter optimization in general.(4) The node in layer 4 is an adaptive node, and its output is computed as O4,i = wi fi = wi (pix + qiy + ri), where pi , qi , and ri are the consequent parameters of the node i. In the last layer, there exists only one node whose output is computed by using the following equation: O5 = ?The crisp inputs x and y to the node of the first layer and the output O1i of this node are defined as O1i = uAi (x), i = 1, 2, O1i = uBi–2 (y), i = 3, 4, (1) where Ai and Bi are the membership values of the generalized Gaussian membership function defined as [23] u(x) = e – (x– ?i ?i)2 , (2) where pi and ?i are the premise parameters.Nevertheless, these methods could not achieve the promised results in all experimental cases and need much computation time; therefore, we use the GWO algorithm to determine the optimal weights of ANFIS and reduce the time complexity.One of these hybrid learning algorithms is the hybrid between the back–propagation algorithm and the LSM.