

Learning by Choice of Internal Representations

Authors: Tal Grossman, Ronny Meir, Eytan Domany

Abstract: We introduce a learning algorithm for multilayer neural networks composed of binary linear threshold elements. Whereas existing algorithms reduce the learning process to minimizing a cost function over the weights, our method treats the internal representations as the fundamental entities to be determined. Once a correct set of internal representations is arrived at, the weights are found by the local and biologically plausible Perceptron Learning Rule (PLR). We tested our learning algorithm on four problems: adjacency, symmetry, parity and combined symmetry-parity.