ON CONVERGENCE PROOFS FOR PERCEPTRONS

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One of the basic and most proved theorems of perceptron theory is the convergence, in a finite number of steps, of an error correction procedure for an α-perceptron to a classification or dichotomy of the stimulus world, providing such a dichotomy is within the combinatorial capacities of the perceptron. In other words, if a solution exists, error correction will find one in a finite time. A proof is presented which is substantially shorter and more transparent than those now available, and which isolates out the principle on which the theorem depends. We believe this principle will find further use in other theorems of a similar nature.