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**EE 5410: Neural Networks**

**Assignment #2**

**02-22-2018**

1. Activation function: Heaviside / Unipolar Discrete
2. Description:
   * In the case of two unique discrete classes which are classified as belonging to either class 1 or class 0 (as per given data) the Heaviside activation function allows classification in to only these classes with absolute certainty

**Table 1 Perceptron Training Results**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Training** | **Vector of Weights (Initial)** | | | | **Vector of Weights (Final)** | | | | **# of Epochs** |
| **w1** | **w2** | **w3** | **w0** | **w1** | **w2** | **w3** | **w0** |  |
| **T1** | 0.1186 | 0.3393 | 0.6682 | 0 | 78.23 | 123.86 | -36.71 | -154.00 | 399 |
| **T2** | 0.2413 | 0.5599 | 0.6045 | 0 | 78.26 | 125.51 | -37.16 | -156.00 | 424 |
| **T3** | 0.5319 | 0.7914 | 0.2881 | 0 | 78.38 | 125.22 | -36.91 | -155.00 | 417 |
| **T4** |  |  |  | 0 |  |  |  |  |  |
| **T5** |  |  |  | 0 |  |  |  |  |  |