# Study of function g

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In the paper, g is said to be a sigmoid function. However, there are more conditions than that.

* g(0) = 0 is a necessary condition because otherwise we cannot figure out when the path is found (the value of the original neuron is greater than zero).
* In order to guarantee convergence, when choosing tanh as g, the sum inside g should be divided by the number of neurons that got summed.

For the later condition, in the paper it is discussed that the value is relevant to the eigenvalue of T. It will be very difficult to calculate the eigenvalues of T if the values in T is not always 1 or 0. And I’ve tested many values in various conditions, dividing by the number of neurons that got summed is the most stable one. (Which means that it converges always) As for other values sometimes the path found is stuck in a middle point.