# Journal 2 – What is a Neural Network

I enjoy the angle being taken in this video – stressing how impressive it is that our brains are able to distinguish different pictures of the number “3” and still recognize it is owned by the same class. Understandably it’s easier to say that a picture shows the number “3” than to explain why we think so. Breaking down the classification of each digit as a set of rules is a messy process. I find the “goal” of the layered structure to break down the classification of a digit as a set of smaller processes convenient but my intuition tells me the process is much more random than how it’s being explained. Superimposing the weight grid on the input grid to determine if there’s an edge in a certain area of the image was a very effective visualization that helped explain what’s going on in a given node in the secondary layer. Explaining the bias term as the threshold to which activation should occur when compared to the weighted sum of the inputs was helpful – before seeing this video I had just taken the bias term for granted as a best-practice to include in your network. This video spoke briefly about trying to setup your network in order to later derive meaning from the layers within. In the example given the first hidden layer selects edges while the second selects features. I’m wondering if this is really something done in practice since enforcing rules on what information is learnt and where seems to defy the idea of letting the network learn on it’s own without introducing the creator’s bias.

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