**Concept Analysis for Artificial Neural Networks (ANN)**

One of the central concepts of artificial intelligence (AI) that students initially struggle with is that of the artificial neural network (ANN). A basic understanding of the elements of ANNs and how ANNs work in machine and deep learning is foundational to knowing what AI is and what it’s capable of doing.

To teach students about ANNs, I break the concept down into manageable chunks. The first thing to know is what an artificial neuron is, what its parts are, and how each part works, and I use the analogy of organic neurons to help students with this.

Next, I explain how a simple feed-forward network works, and the example of identification of a person from a picture by such a network usually works well for students. Before moving on to more complicated types of ANNs, I typically introduce how different types of training take place using the feed-forward network. The simple network makes it easier for students to understand.

Only with all of these elements taught, do I then introduce convolutional and recurrent ANNs. Without time spent on the previous concepts building to these types of networks, students would be lost on convolutional and recurrent ANNs; however, with the previous concepts taught, students seem to find it easy.