

2) (30 points) Write a small essay of less than a page in length about the advantages and disadvantages of using a neural network to represent neuronal communication. Please review your notes on the lectures on the nervous system.

Some of the advantages to neural networks in representing neuronal communication are that these systems can store information on the entire network. In traditional programming systems, data is stored in a database. Neural networks are, in fact, networks, so if there is information missing, the program can still function and produce results. Neural Networks are also critical as they are a system that can work with insufficient knowledge. In turn, the system can be trained on what we know as a fact and what we might predict. The system can make decisions about unaccounted events by using the outcomes of similar events. They can also have the numerical strength to compute more than one function at a time (also known as parallel processing).

However, some of the disadvantages are worth mentioning. Neuronal communication is a systematic response in the human body, every part has a job, and when put all together, the task is carried out in unison. One of the disadvantages of neural networks is the lack of a proper network structure. There is no specific rule for determining and creating an artificial neural network. In fact, this can be a timely manner as the best-case scenario of the neural networks comes through trial and error and lots of time. Neuronal communication can also be tricky while using a neural network because while the advantage is that it can do parallel processing, it's just that. The network can only compute in terms of numbers, which can be a challenge when the data is categorical.