

To me, Machine Learning is a very interesting field. It's about letting a computer "learn" from a data set or sets. This learning then allows the computer to find patterns and execute tasks in new data sets based on what it learned from the training data sets. But the "learning" the computer does is all dependent on the data its learning from and the algorithm being used.

In ML, data is the most important part. If you have bad data, then your model will produce bad results. Garbage in, garbage out. For a model to be useful and produce good results, the data set needs to be crafted. Just giving a model data without sanitizing and crafting the data to fit the model will just give bad results.

Machine learning is specifically a computer's ability to find patterns in data and then apply those patterns to new arbitrary data. It is always trying to recreate the data it has trained on. Artificial Intelligence is the broader term that includes, but is not limited to, machine learning. Artificial Intelligence is a term for a computer program or algorithm that can mimic human behavior to varying degrees.

My favorite example of an application of machine learning is Nvidia Broadcast. It is an app for windows that can filter background noise out from your microphone input. It uses machine learning to learn what is important audio to keep and what is background noise to remove. The huge range of valid input and the intense complexity of audio data makes this a good problem to solve with machine learning with much less work than if written traditionally. In the same vein, Nvidia Broadcast also can apply effects to your camera input. It uses another machine learning model to apply real-time filters like denoising the image or replacing/blurring the background. This is another situation of huge variability and complexity of the input data that is perfect for a machine learning application.

I have personally wanted to get into machine learning for a while now and this class is the perfect opportunity for it. I have seen many examples of it and have had my own ideas for machine learning related projects, but it has always felt a bit out of reach for me to tackle myself at the time. Now this class gives me an excuse to focus my time on ML and start making some of the projects that I've had ideas for.