The expert system, which was a representative method of artificial intelligence, presupposes that a person enters a large amount of data directly. This approach could play a big role in natural science-based disciplines, such as medicine and biology. Considering a program based on an expert system that helps doctors diagnose, all you have to do is to keep a database and register all of the medical rules and patterns that humans have discovered so far.

Over time, however, the world has begun to demand programs that embody areas where even people do not yet know exactly what the pattern is. A typical example is voice recognition. When producing a voice assistant, it should be possible to understand what sentence a person said in sound → alphabet, and to interpret what the sentence means in alphabet. Such a system cannot be formed by making rules one by one. In the case of sound, it is transmitted to the computer in the form of a PCM, which usually contains about a page worth of data per second. It's not as simple as "since you have fever, chills, and vomiting, you have the flu." The computer needs to be able to look at the overall big data that even includes errors and clearly pinpoint the information's significance.

So the way that came out is machine learning. As the name suggests, machine learning originated from an attempt to make machines learn like humans do. It mainly uses a statistical approach, but contrary to how a flu is diagnosed as said above, the machine will observe that "most people with the flu had a high fever, chills, and vomit" to get to the conclusion. As you can see from this example, it is similar to the way humans infer and is very powerful.

Quite simply, machine learning can be represented as another way of approaching and emulating human thinking from the perspective of efficient calculation and processing using statistics and data. The input data is the observation, so knowing exactly what observation (data) to use is also important when attempting to find a pattern. Features are what the observation is, for example the numbers 1420, 1450, 1600 can represent anything, until we know what feature it is- SAT Score. The feature gives these quantitative data a meaning. Quantitative data means that the data is a number, while qualitative data is usually characters and they can only be one of a finite set of values (such as one of the four in: Freshman, Sophomore, Junior, Senior.) The qualitative data lets us visualize and understand better how to utilize the quantitative sets of data

Now, almost all systems (artificial intelligence, search complement, customized advertising, sales management, machine manipulation, workforce reorganization, etc.) are relying on machine learning methodologies to deliver fast, efficient, and satisfactory results. Because of this, I'd like to learn more about machine learning to be able to better solve problems, and be able to automate simple tasks that can be quantified. In the future I want to develop something that can listen to audio, then translate it accurately using machine learning. This can greatly help people traveling or even help automate the subtitling process on movies and tv shows that are created in a different language.