

Review of AutoDraw by Google

My report is about the Google's Creative Lab's newest product: AutoDraw. Essentially, AutoDraw is a web-based app powered by machine learning. It's easy and fun to use. Create a new canvas, pick your favorite colour and start drawing. In the process of your drawing, the brains behind Google will continuously suggest the picture it thinks is similar to yours, clipped along the top bar. Whenever you like, you can mouse over them and select one to replace your drawn object.

As a computer science student, I am very interested how it actually works. For the past few years, Google has been trying hard to handwriting recognition ability in their translation app. This function allows people to scrawl a word quickly with their finger. After some calculation, google is able to recognize it and automatically translated into another language. Handy when you're visiting France and no-one wants to speak English to you. As the first step, this function is relatively easy to implement: people tend to draw words by moving their strokes in the similar order and direction. As time goes, people will give their feedback whether the suggestion correct or not, so the algorithm can get better over time.

In the second step, in November, Google's Creative Lab (the same lab) developed "Quick, Draw!", which asks users to draw something as the computer said and the neural network will try to guess what that object is. In a tech TV program, the group explained that their goal was to build the world's largest doodle dataset.

At the last step, AutoDraw combines the algorithms and database from both Google Translation and Quick, Draw!. As you're trying to draw, it goes through the database to find other drawings is similar to yours. If you pick one, that's positive feedback for the algorithm and this connection will be more widely used in the future. If you pass over it entirely, that's negative feedback and this relationship between your drawing and the matched drawing will be less used.

In my opinion, in the future AutoDraw can have more powerful and practical applications. Right now it can only suggest a single object, but in the future, anyone can be a designer easily. We may just plot the outline of each session of a poster, a website, or even an iphone application, and the algorithms can suggest the template you may want to use and even polish and beautify everything for you. It is exciting looking forward that day that everyone is an artist!