

Tian Xiaoyang  
26001904581

When the iteration number is set to 50000, the program usually finds the optimal out at around 30000<sup>th</sup> iteration, this is a huge number, and it takes a fair amount of time.

But if the iteration number is kept the same, we change the sigmoid slope to 5 times its original, the process is sped up by 5 times.

The original iteration it takes was 36702, after the sigmoid slope is set to 5, it took only 7271, about 1/5 of the original iterations.

When the slope is set 10, the iteration it takes is 2188, which is about 1/10 of the original iterations.

In conclusion, by increasing the slope, we are basically speeding up the process and make the program take less time(iterations) to run to get an optimal result.