



Figure 1: The winner neuron and its four neighbours.

$$w_{new} = w_{old} + g * K * (x - w_{old}) \quad (1)$$

For example, try with  $K = 0.05$  here.

Here  $g$  is a strength of influence of renew. That is, (1) the winner should be strongly influenced while (2) the next two neighbors should be not so strong, and (3) the next of the next neighbors should have a weaker influence than the next ones. So, try  $g = 1$  for the winner,  $g = 0.5$  for the next two, and  $g = 0.25$  for the next next.

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Then today's task is

to show on your display 5 weight pair with winner being center the two next neighbors both sides and two next next neighbors also both sides, like the below:

$$\begin{aligned} & (w_{1 \rightarrow i-2}^{old}, w_{2 \rightarrow i-2}^{old}) (w_{1 \rightarrow i-1}^{old}, w_{2 \rightarrow i-1}^{old}) (w_{1 \rightarrow i}^{old}, w_{2 \rightarrow i}^{old}) (w_{1 \rightarrow i+1}^{old}, w_{2 \rightarrow i+1}^{old}) (w_{1 \rightarrow i+2}^{old}, w_{2 \rightarrow i+2}^{old}) \\ & (w_{1 \rightarrow i-2}^{new}, w_{2 \rightarrow i-2}^{new}) (w_{1 \rightarrow i-1}^{new}, w_{2 \rightarrow i-1}^{new}) (w_{1 \rightarrow i}^{new}, w_{2 \rightarrow i}^{new}) (w_{1 \rightarrow i+1}^{new}, w_{2 \rightarrow i+1}^{new}) (w_{1 \rightarrow i+2}^{new}, w_{2 \rightarrow i+2}^{new}) \end{aligned}$$

Figure 2: The winner neuron and its four neighbours.