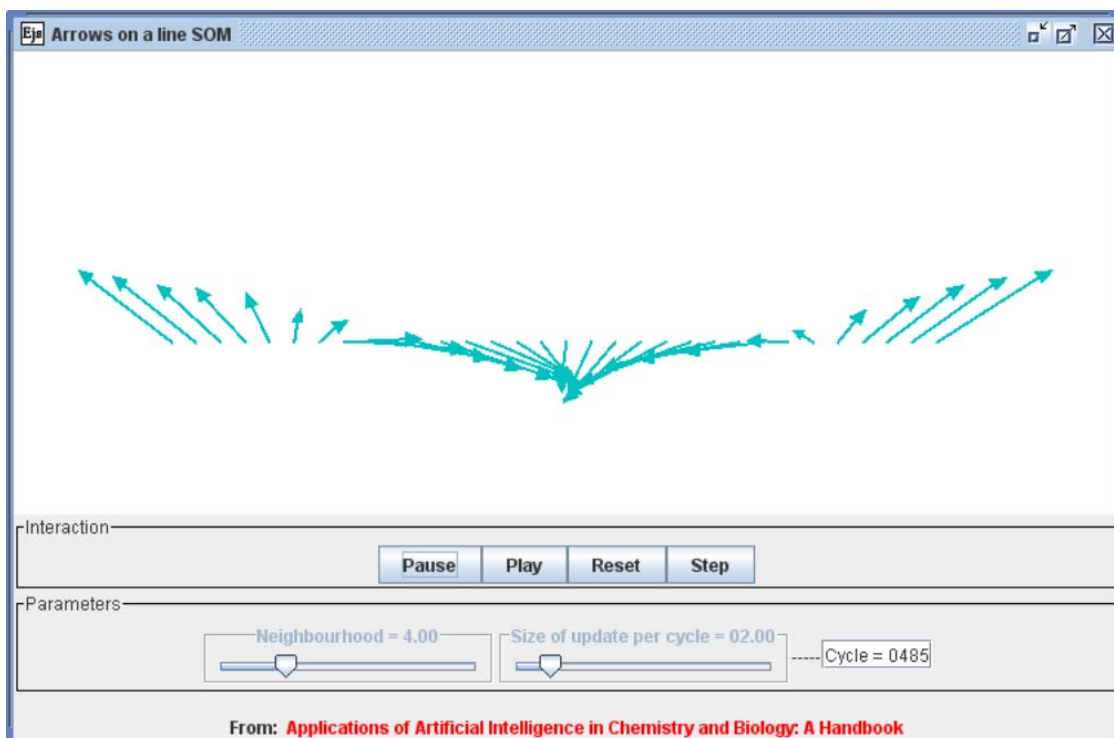


Self-organizing Map – Arrows on a Line

This is about as simple as a SOM can get: each input data point consists of a single value between 0 and 360. The SOM weights similarly consist of a single value, and these are plotted as an arrow at each node whose direction is determined by the weight. The development of a correlated set of weights is rapid.



BUTTONS

Button	Function
Pause	Temporarily halt execution.
Play	Restart the program if it has previously been paused.
Reset	Restart the calculation from scratch; all parameters are set to their default values.
Step	Execute a single cycle of the program

SLIDERS

Slider	Default	Comment
Neighborhood	4.0	The number of nodes on either side of the BMU that will be updated. Diminishes as the cycles pass.
Size of update per cycle	2.0	As it says on the can.

Investigations

1 Default parameters

Run the simulation several times and observe that the pattern of arrows to which the SOM converges is not constant from run to run. This is to be expected, since, like all SOMs, the program is dependent on random numbers.

2 Adjustable parameters

Restart the run and try adjusting the size of the neighborhood and the update per cycle. Investigate how the size of the neighborhood affects the appearance of the completed map. Is it better to have a large or a small neighborhood?