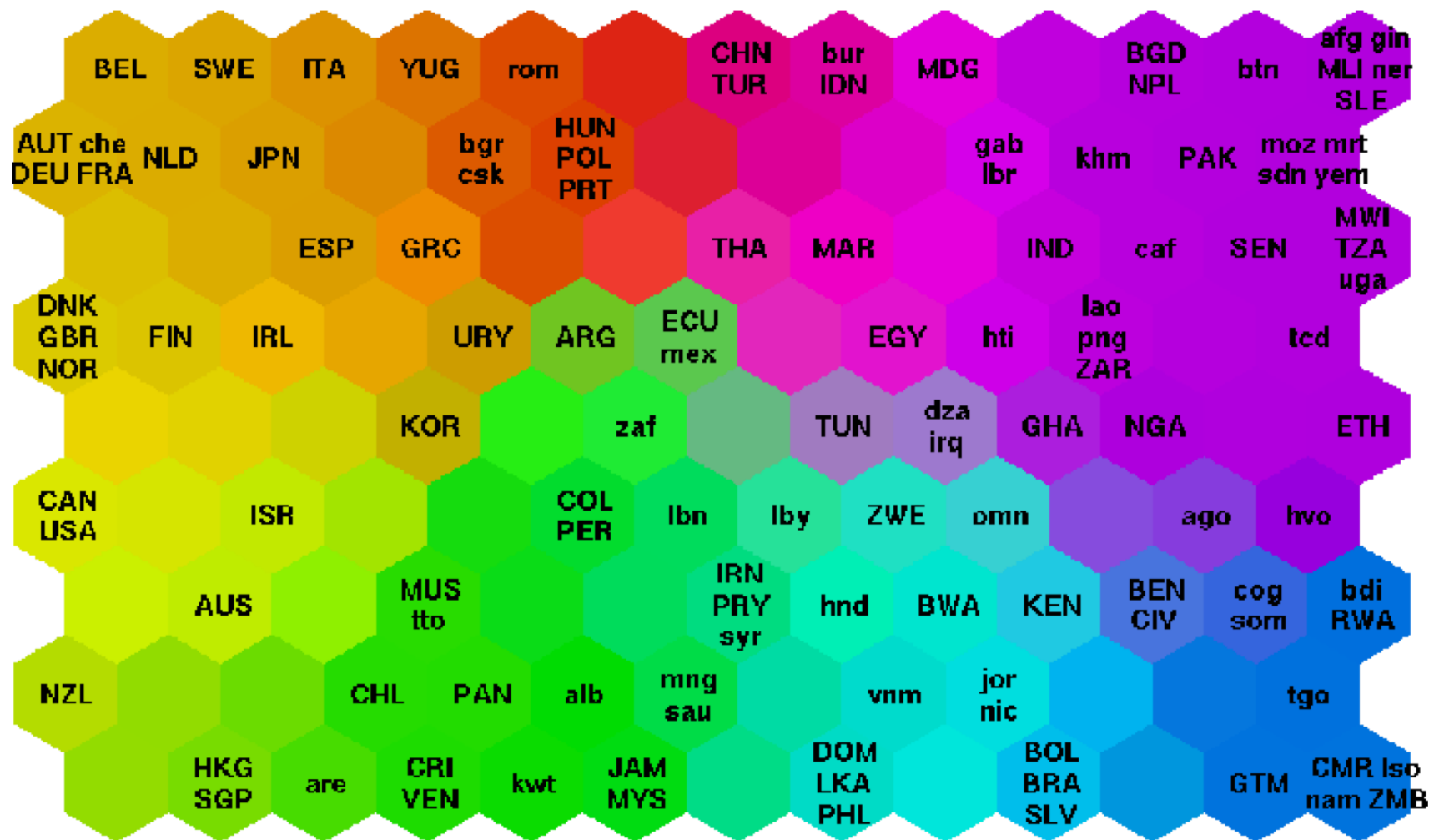
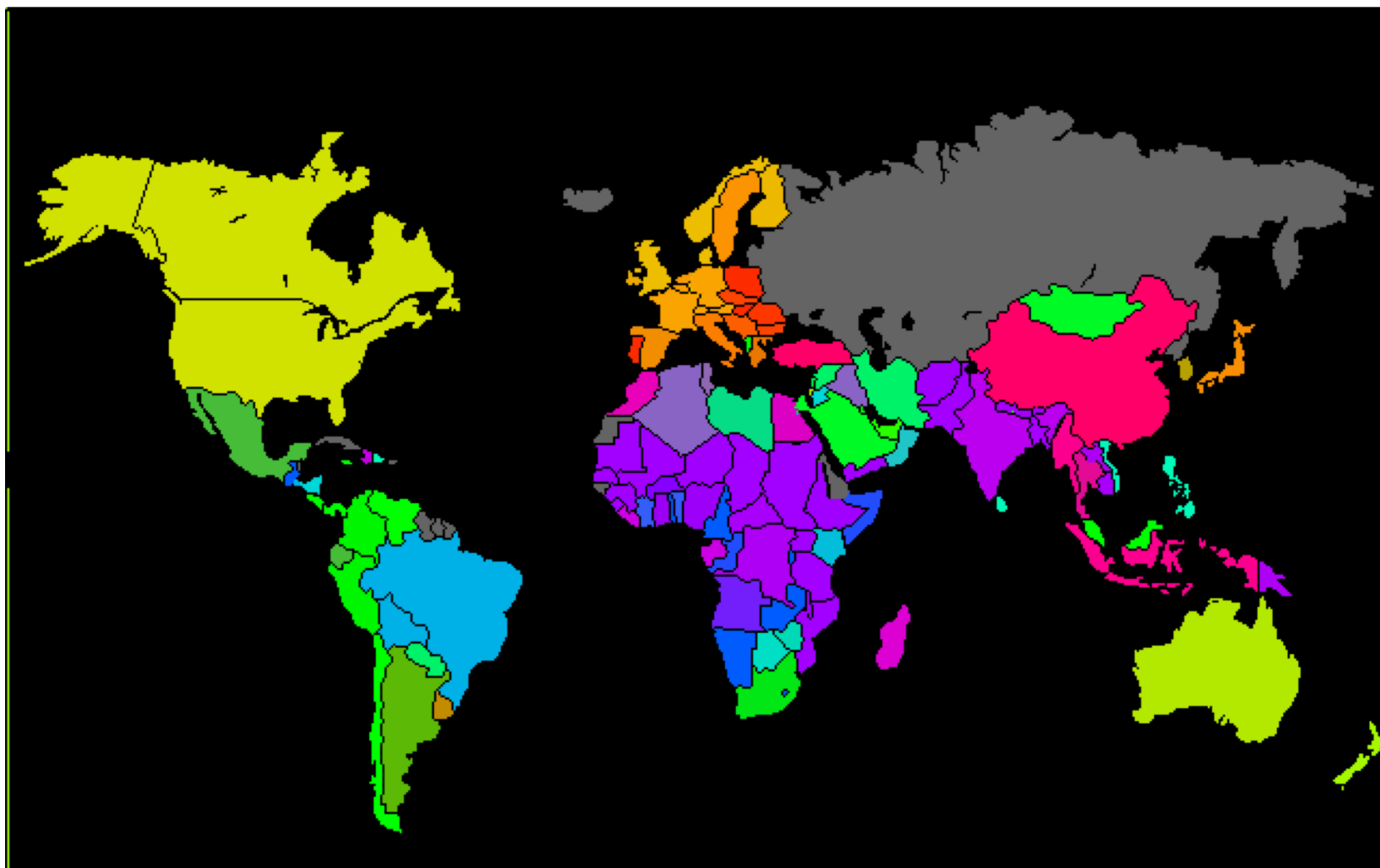


Mapas auto organizáveis

Jones Granatyr





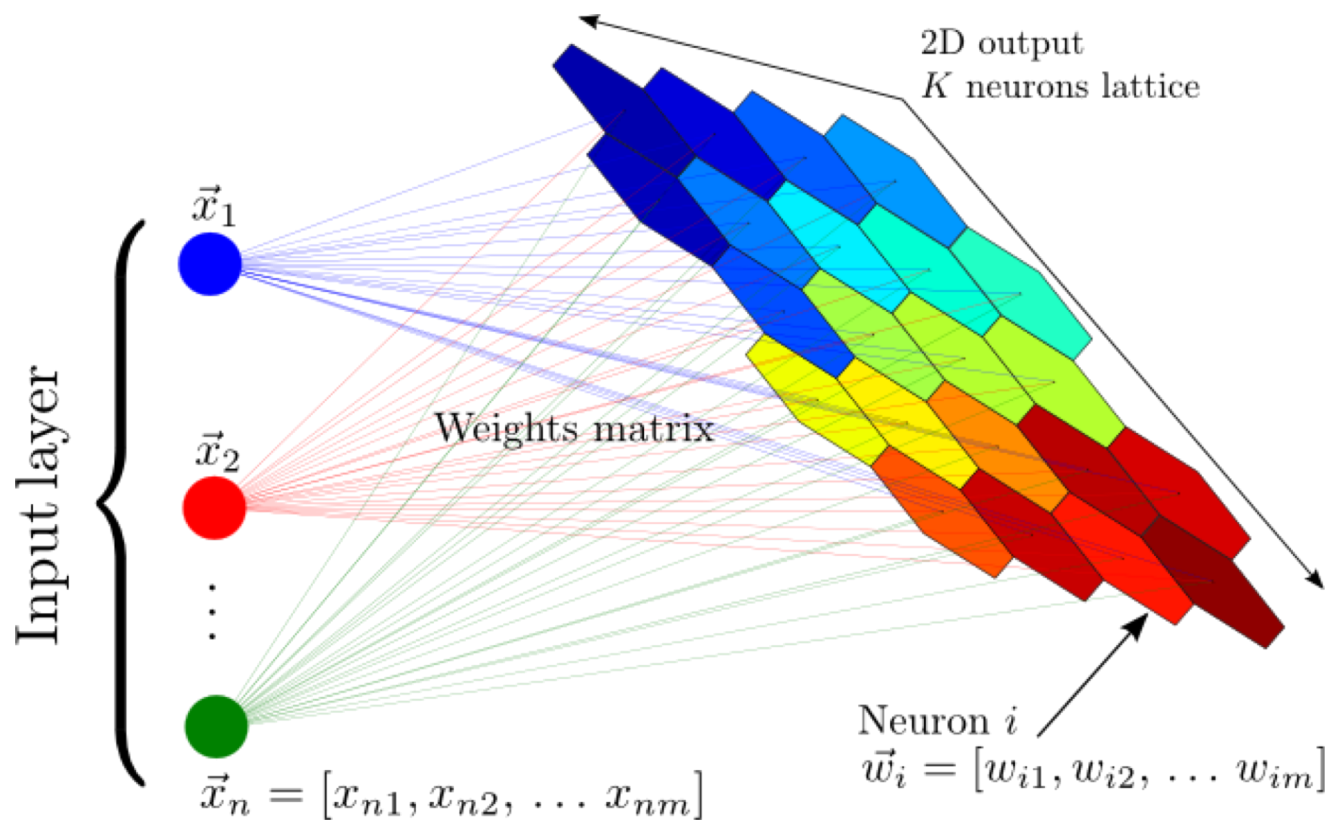


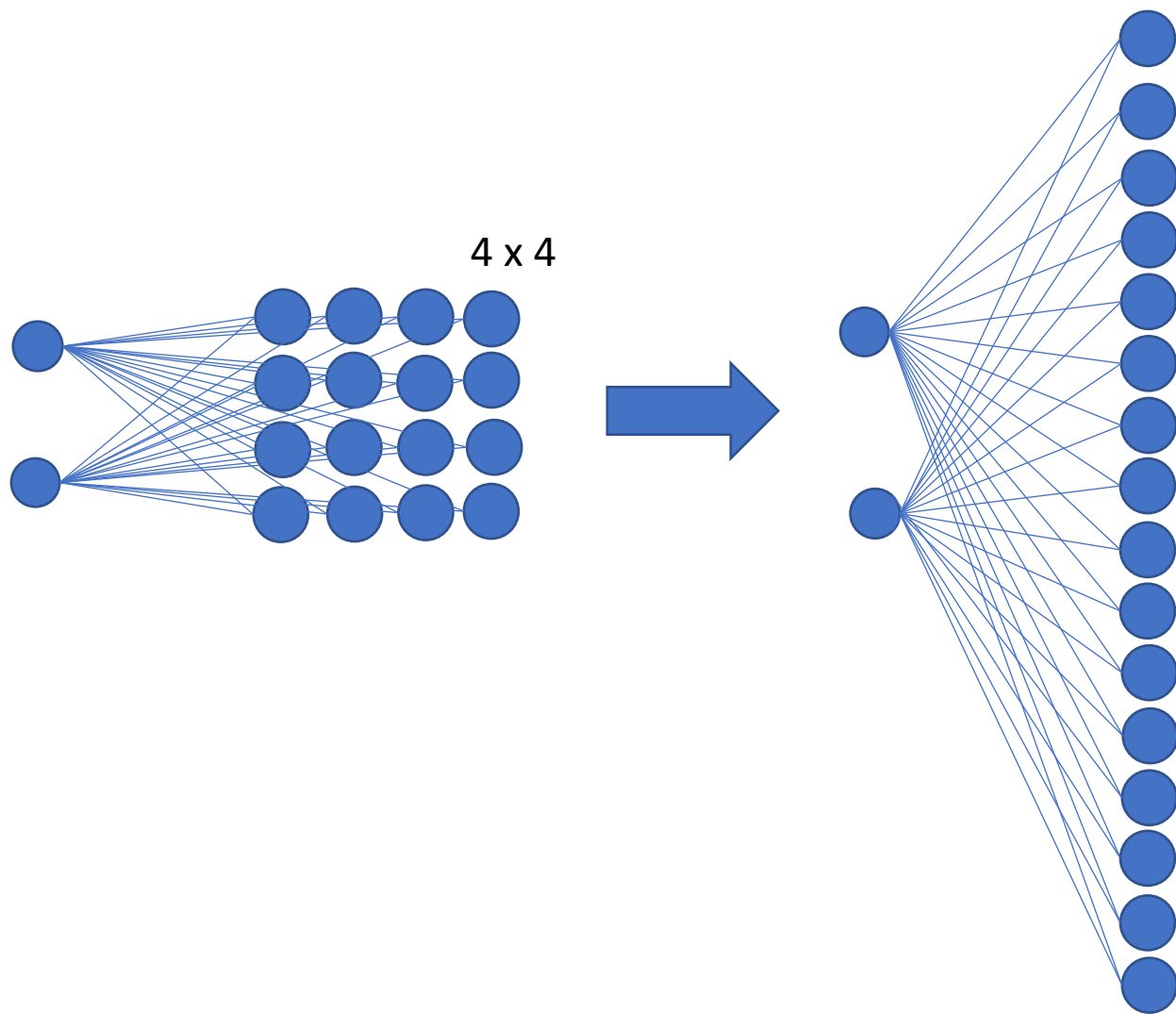
Fonte: <http://www.cis.hut.fi/research/som-research/worldmap.html>

Mapas auto organizáveis

1. Algoritmo para agrupamento que utiliza redes neurais artificiais
2. Pode também ser utilizado para redução de dimensionalidade

Mapas auto organizáveis





Tamanho do SOM

- $tamanho = 5 \sqrt{N}$
- Base com 178 registros
 - $tamanho = 5 \sqrt{178}$
 - $tamanho = 5 \sqrt{178}$
 - $tamanho = 5 \times 13,11$
 - $tamanho = 5 \times 13,11$
 - $tamanho = \mathbf{65,65 \text{ células}}$
- Matriz 8 x 8
- Consultar autor Vesanto

Idade	Salário
21	1800
20	1500
35	1100
41	5200
49	4000
37	1800

Idade

Salário

P1

P2

Nó 1: $(P_{1,1} : P_{1,2}) = 0,22$

Nó 2: $(P_{2,1} : P_{2,2}) = 0,10$

Nó 3: $(P_{3,1} : P_{3,2}) = 0,31$

Nó 4: $(P_{4,1} : P_{4,2}) = 0,56$

Nó 5: $(P_{5,1} : P_{5,2}) = 0,33$

Nó 6: $(P_{6,1} : P_{6,2}) = 0,98$

Nó 7: $(P_{7,1} : P_{7,2}) = 0,87$

Nó 8: $(P_{8,1} : P_{8,2}) = 0,97$

Nó 9: $(P_{9,1} : P_{9,2}) = 0,71$

Nó 10: $(P_{10,1} : P_{10,2}) = 0,65$

Nó 11: $(P_{11,1} : P_{11,2}) = 0,21$

Nó 12: $(P_{12,1} : P_{12,2}) = 0,75$

Nó 13: $(P_{13,1} : P_{13,2}) = 0,43$

Nó 14: $(P_{14,1} : P_{14,2}) = 0,87$

Nó 15: $(P_{15,1} : P_{15,2}) = 0,28$

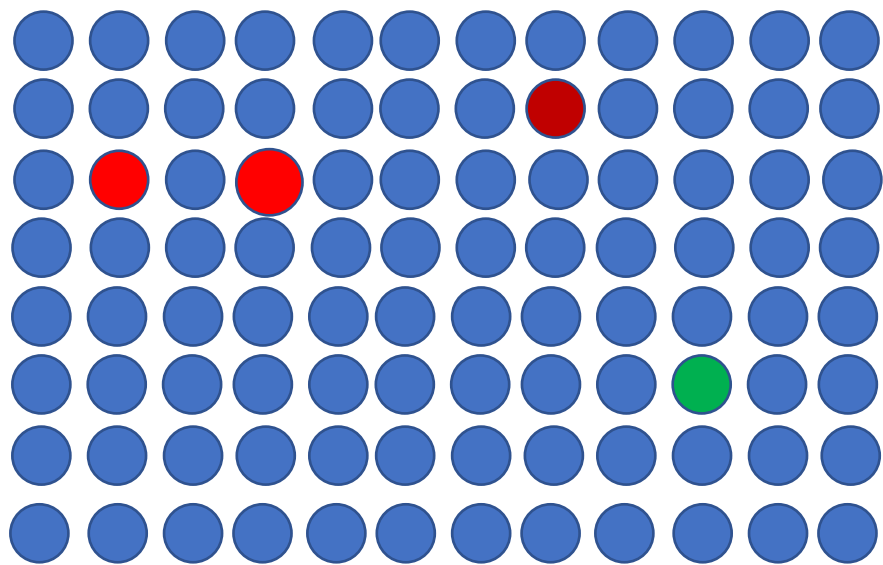
Nó 16: $(P_{16,1} : P_{16,2}) = 0,73$

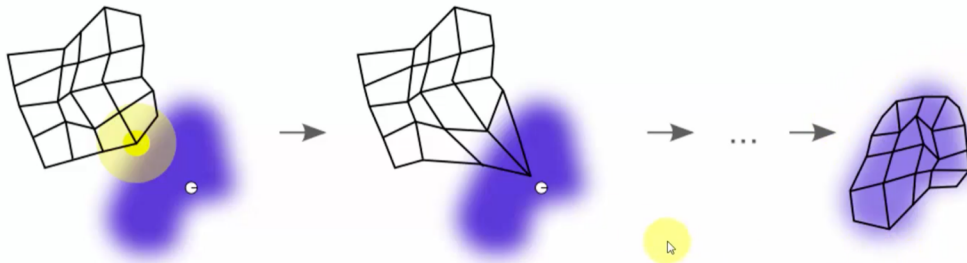
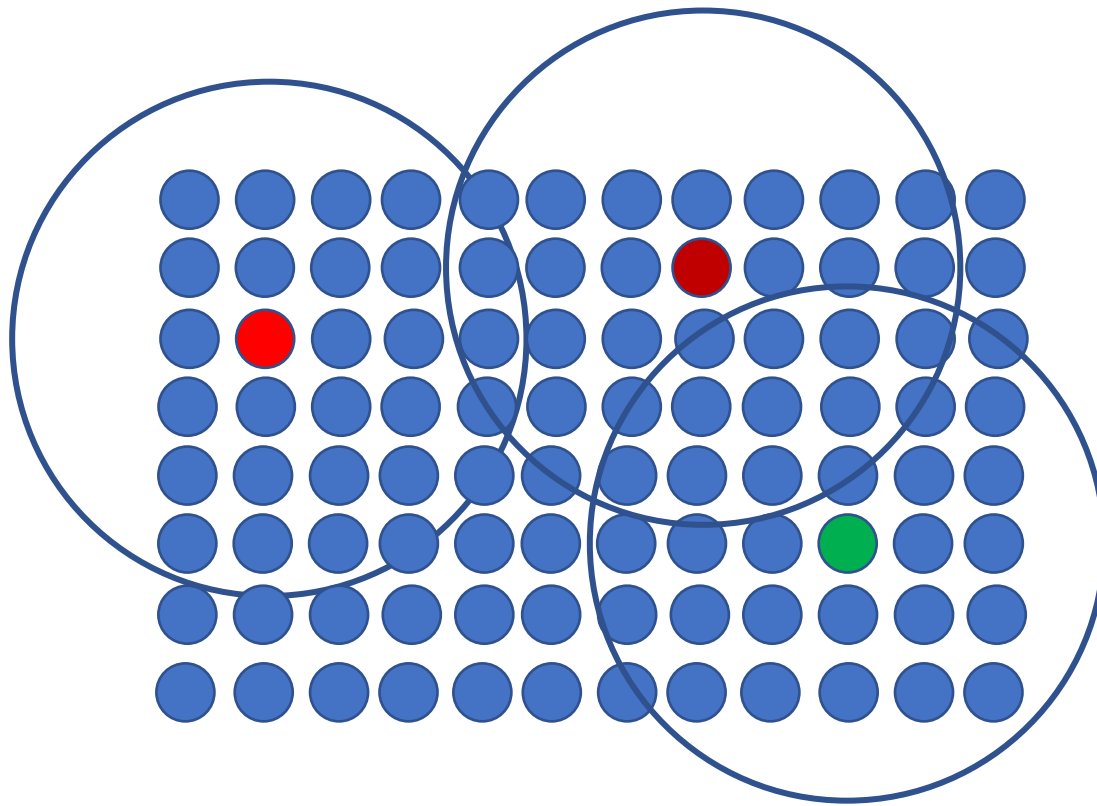
$$DE(x, y) = \sqrt{\sum_i^p (x_i - y_i)^2}$$

BMU - best matching unit

Idade	Salário
21	1800
20	1500
35	1100
41	5200
49	4000
37	1800

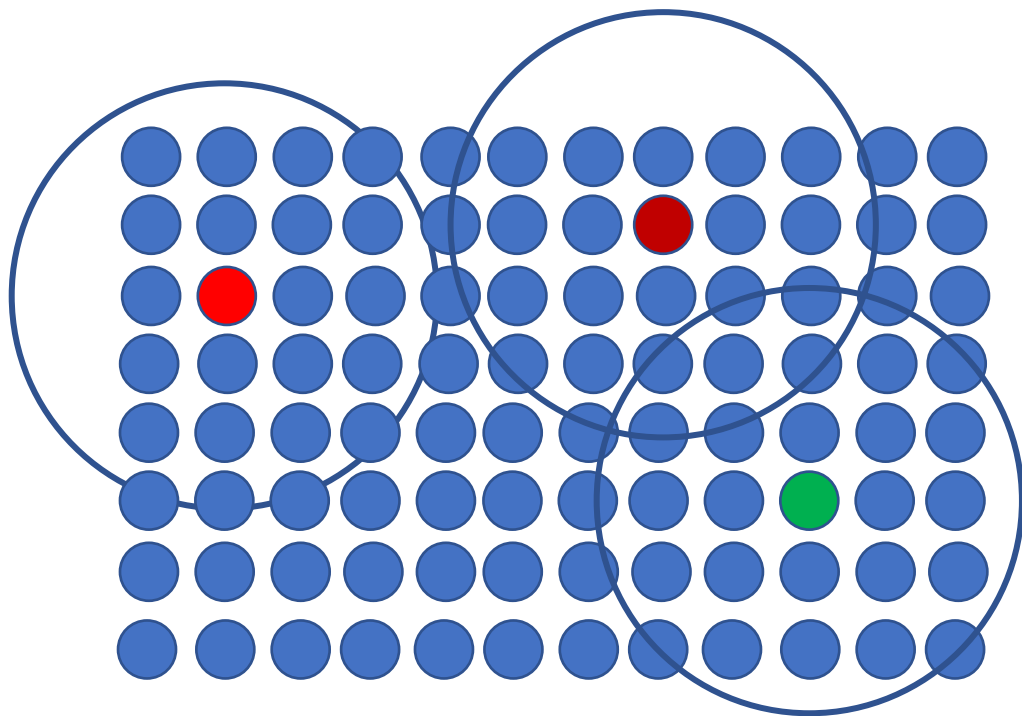
A scatter plot with a horizontal x-axis and a vertical y-axis. It contains several data points represented by yellow and white circles. A single red circle, representing the Best Matching Unit (BMU), is located at the coordinates (15, 1000). The plot visually demonstrates the proximity of the input data to the prototype vectors of the nodes.

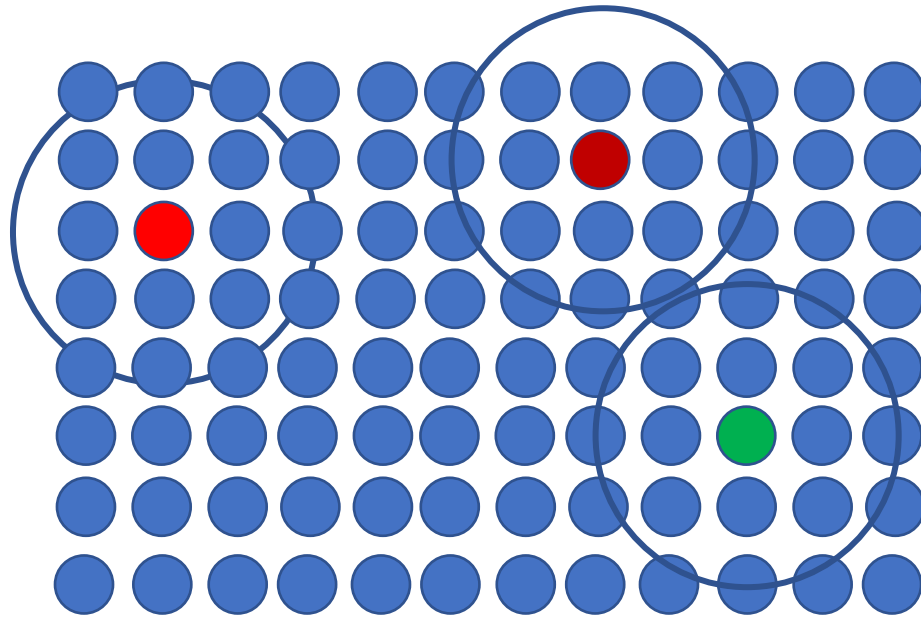


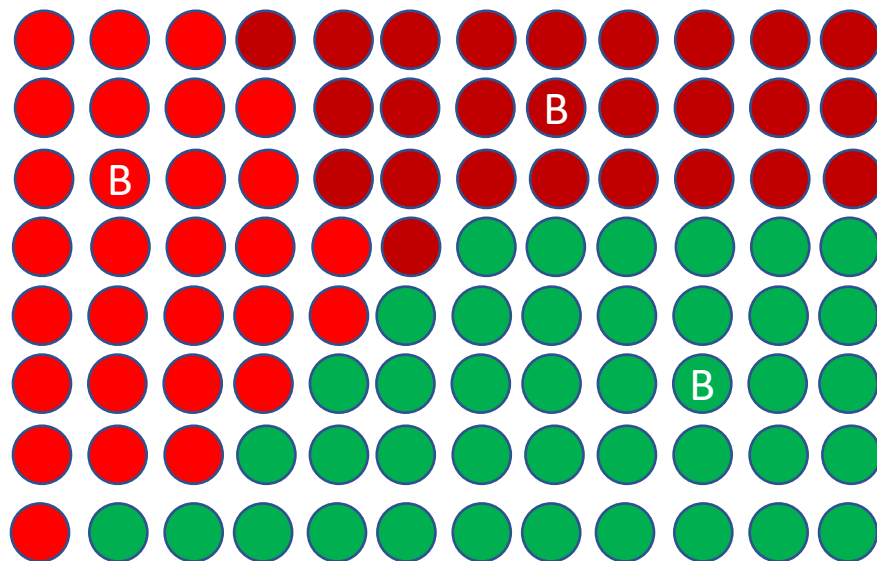


Fonte: https://pt.wikipedia.org/wiki/Mapas_de_Kohonen

Trazer os neurônios mais perto da entrada, pois os neurônios são organizados de acordo com as entradas







Conclusão

