Homework 5: Self-organizing Maps

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Data Mining II

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1 Exercise 1: Implementation of online SOM algorithm

Seed for random number generator set to 0.

1.a

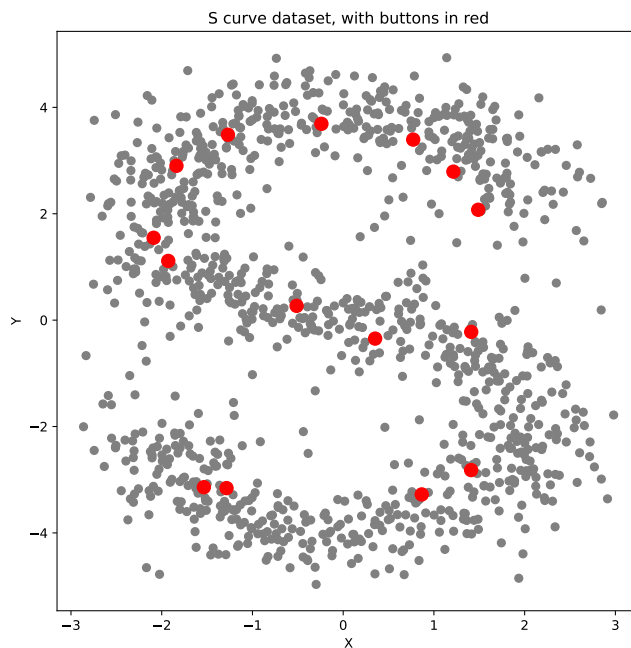See *compute_som.py* and *somutils.py*.

1.b

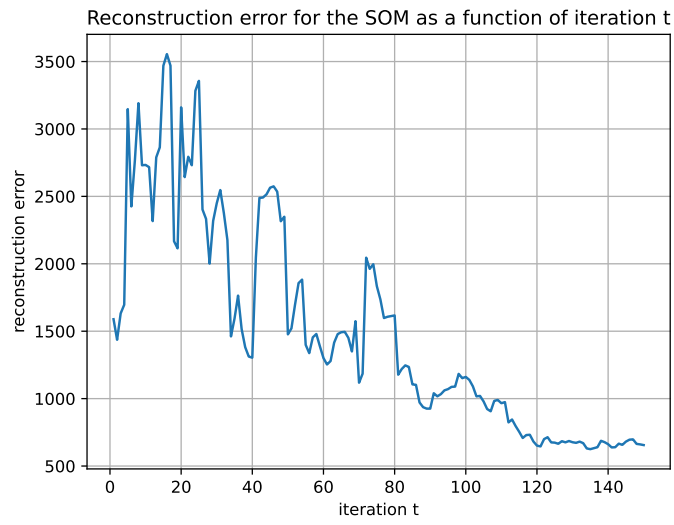Figure 1: S-shaped dataset with SOM buttons superimposed.

1.c

Figure 2: Reconstruction error as a function of the number of iterations, plotted for $N = 150$ iterations.

2 Exercise 2: Evaluation on *crabs* dataset

Seed for random number generator set to 0.
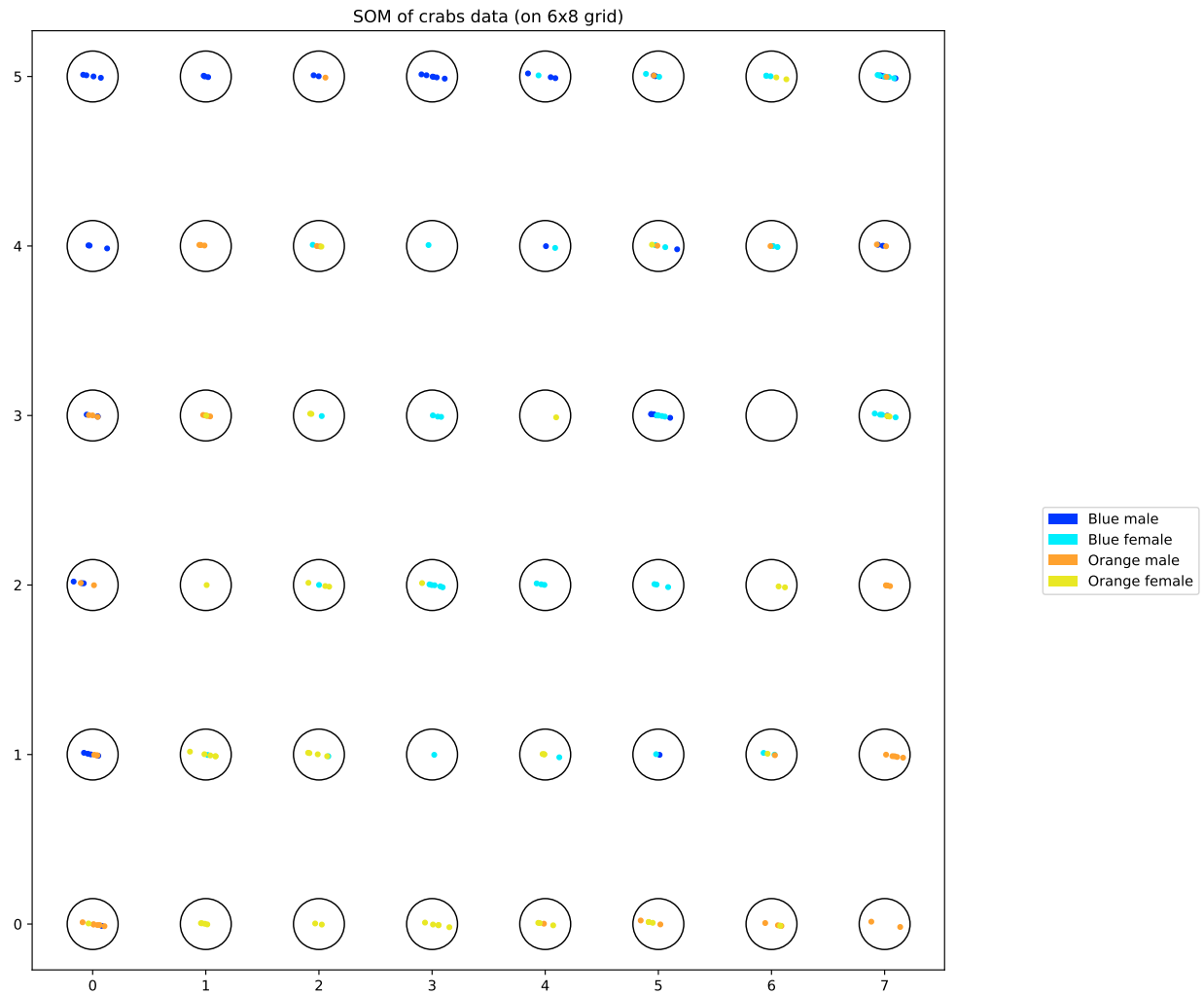
2.a

See *output_som_crabs.txt* file in folder.

2.b

Figure 3: SOM applied to the *crab* dataset. The circles represent the 6×8 grid of buttons, while the coloured dots depict the data points.