Group 15 - LAB 2

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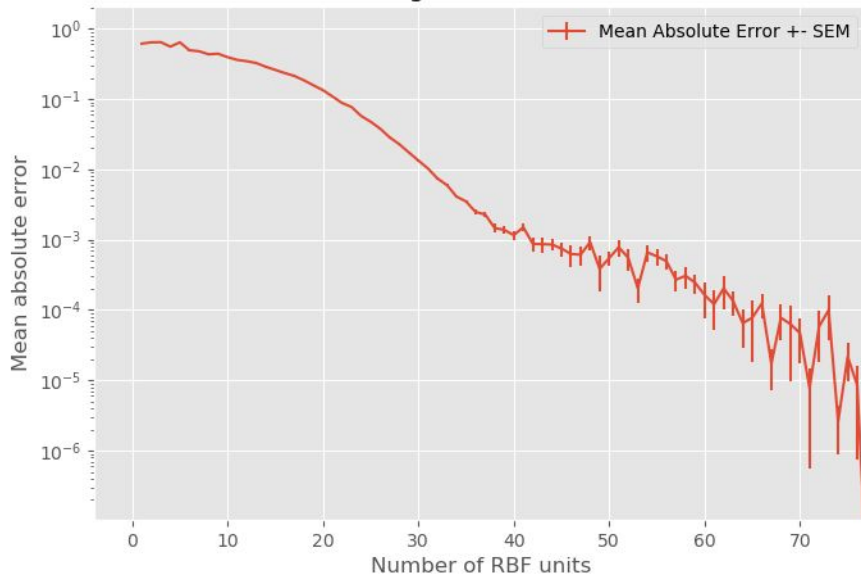# 3.1
Batch mode training using least squares

Analysis of absolute error
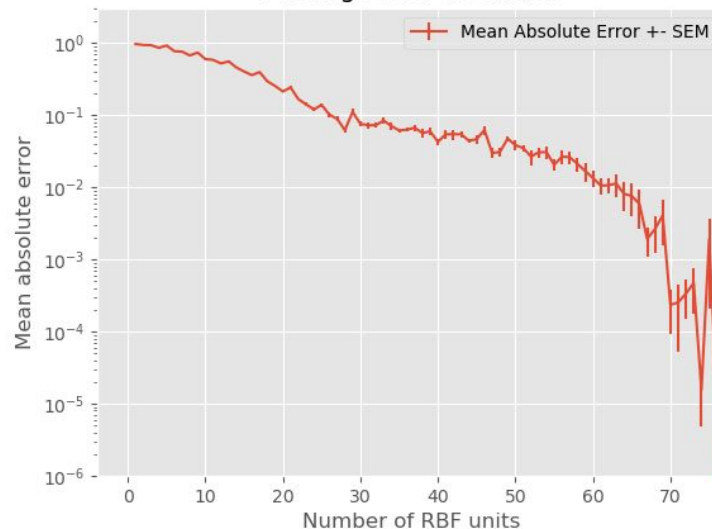
RBF units linearly spaced.

Decay of mean absolute error on sin2.
Average over 10 trials.

Decay of mean absolute error on square2.
Average over 10 trials.

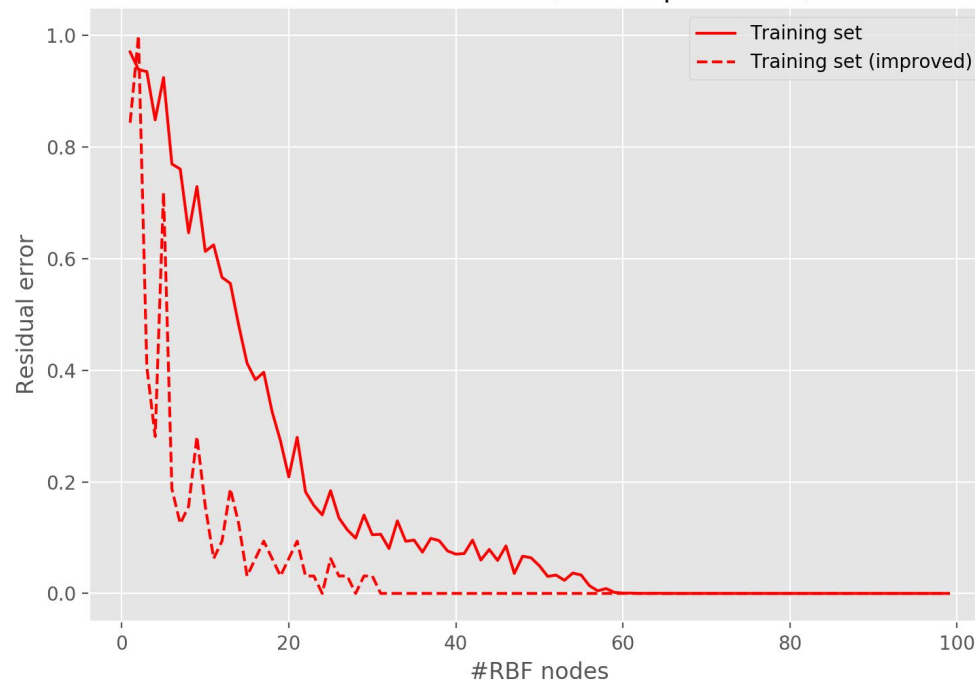0.1: 22 units
0.01 31 units
0.001 42 units

0.1: 27 units
0.01 60 units
0.001 70 units

Step transformed RBF output on square
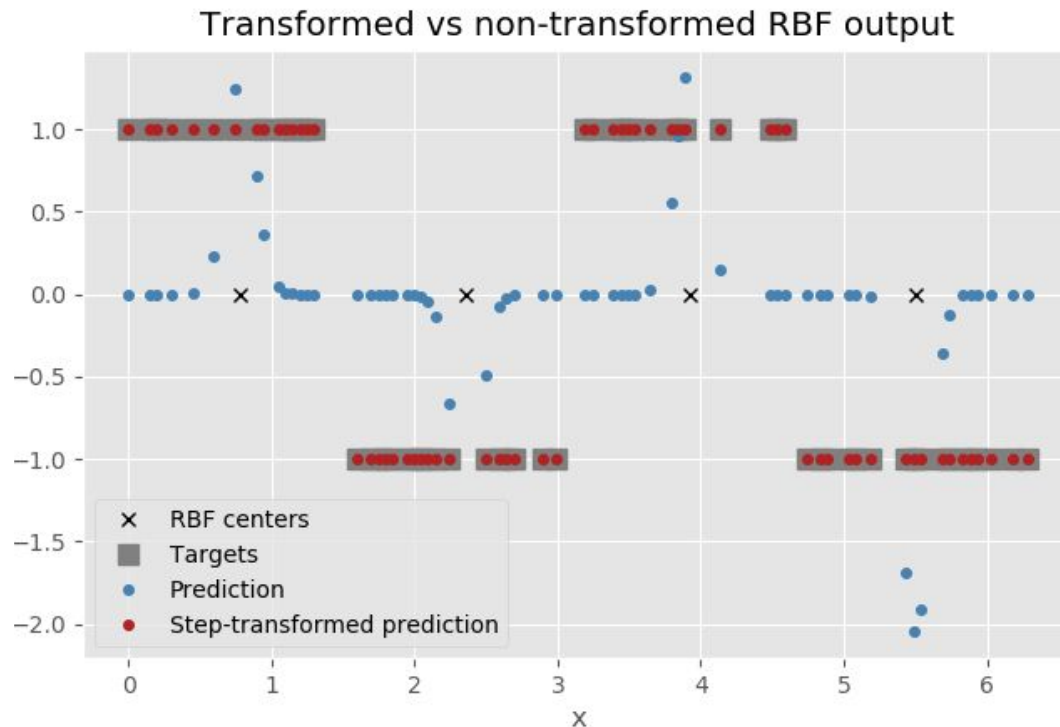
Linearly spaced RBFs:

Residual error over the number of RBFs, #data-points=64, RBF-variance=0.1

Step transformed RBF output on square

4 intelligently spaced RBFs:
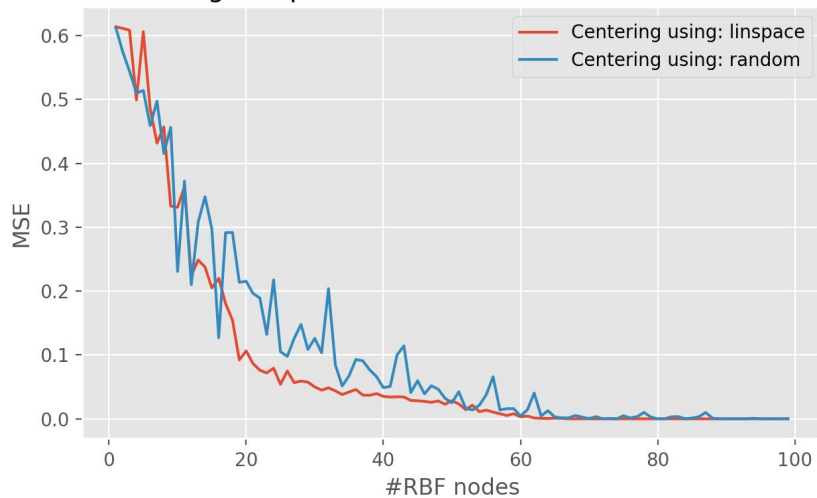0 MSE for step transformed
output.
Useful for classification.

Transformed vs non-transformed RBF output
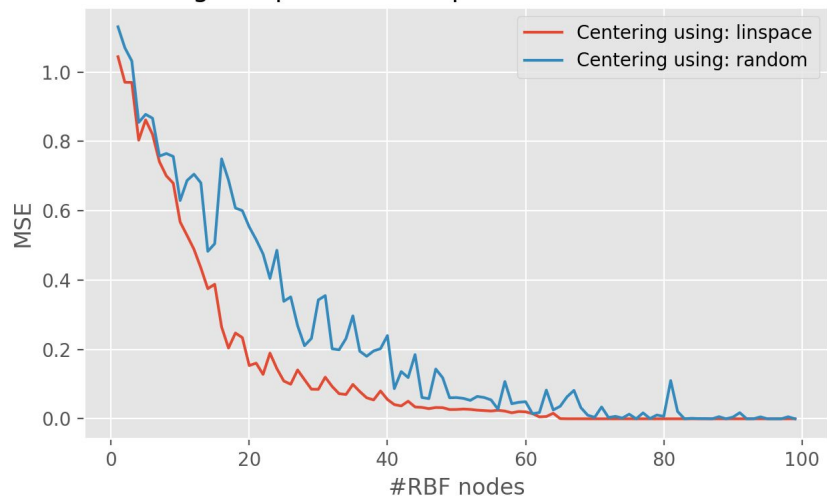
3.2
Regression with noise

Linspaced vs random RBF placement

MSE plotted against number of RBF nodes

Centering comparison for sin2 with data noise of 10%
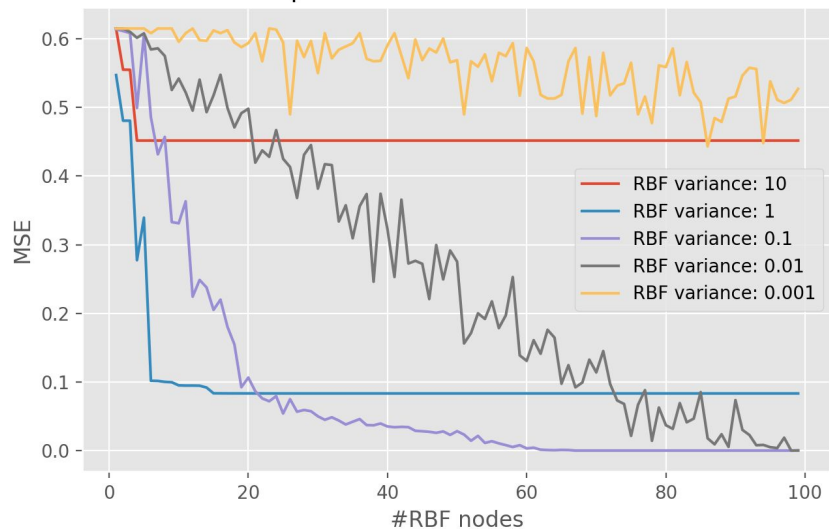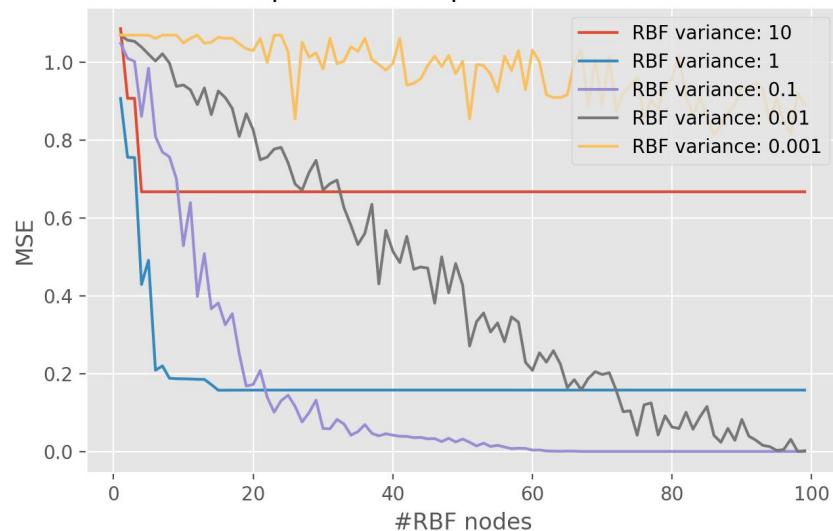
Centering comparison for square with data noise of 10%

Comparison of different RBF widths

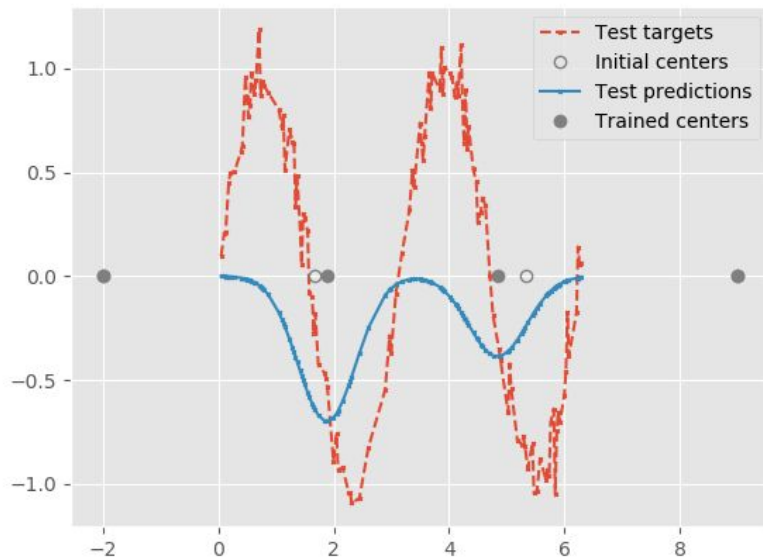MSE plotted against number of RBF nodes

3.3
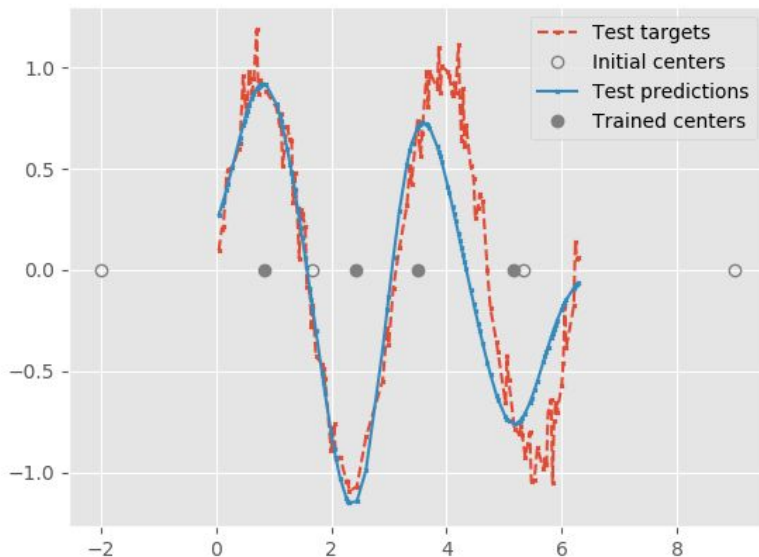# Competitive learning (CL)
to initialise RBF units

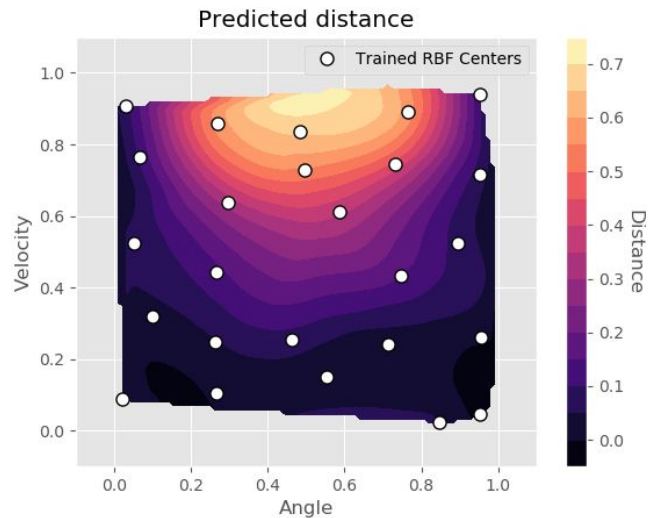# Ordinary CL vs Leaky CL
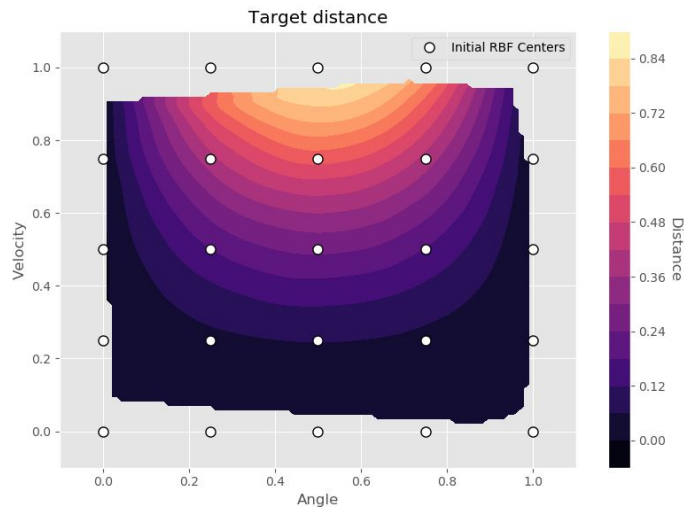
4 RBFs on sin2 data

Ordinary CL

Leaky CL

2d competitive learning

RBF network on 2d data

Highly sensitive to RBF width and number of nodes

Comparison of MSE

- RBF grid side size: 1
- RBF grid side size: 2
- RBF grid side size: 3
- RBF grid side size: 4
- RBF grid side size: 5
- RBF grid side size: 6
- RBF grid side size: 7
- RBF grid side size: 8

Predicted distance
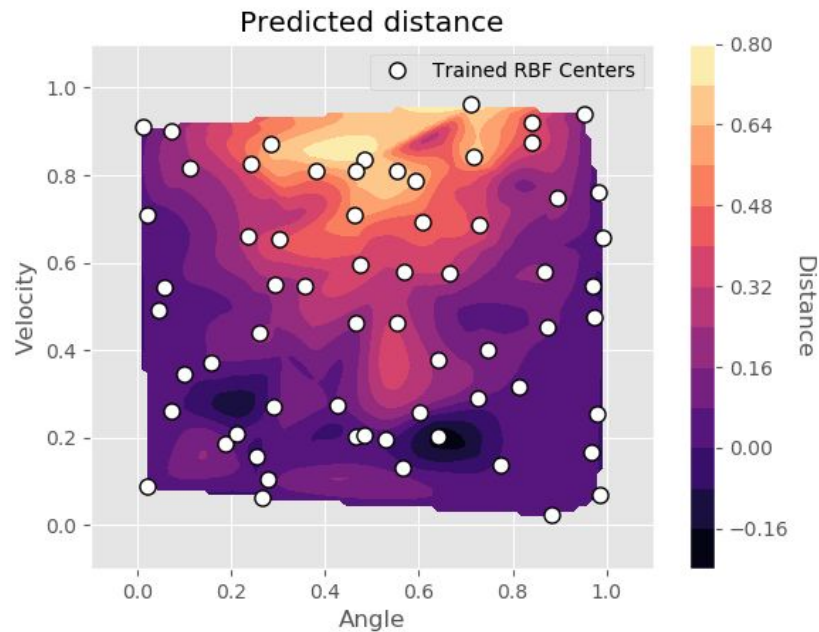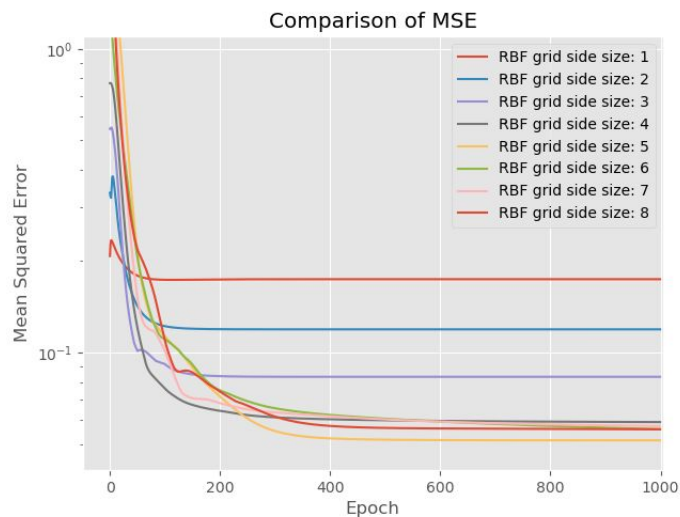
4.1
Topological ordering of animal species

Animal Ordering

Moskito

Housefly Ostrich Duck Frog Crocodile Bear Hyena Kangaroo Rat Elephant Cat Giraffe Pig Antelop

Spider Penguin Pelican Seaturtle Dog Skunk Rabbit Bat Ape Lion Camel Horse

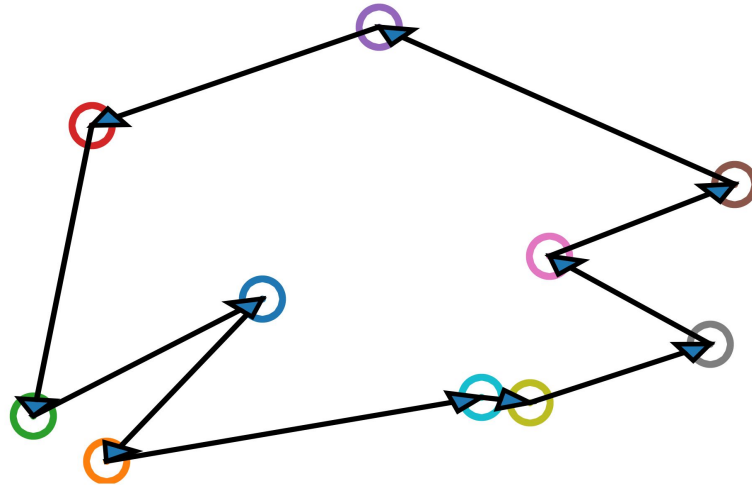Beetle

Butterfly

Dragonfly

Grasshopper

Walrus
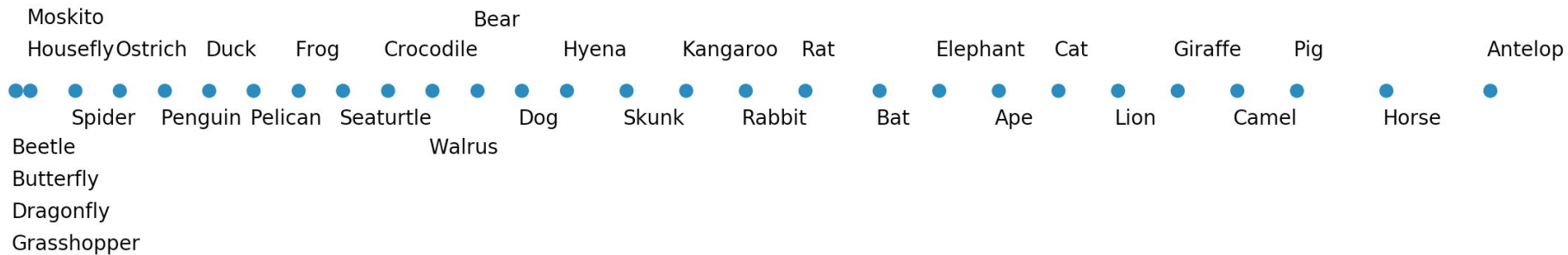
4.2
Cyclic tour

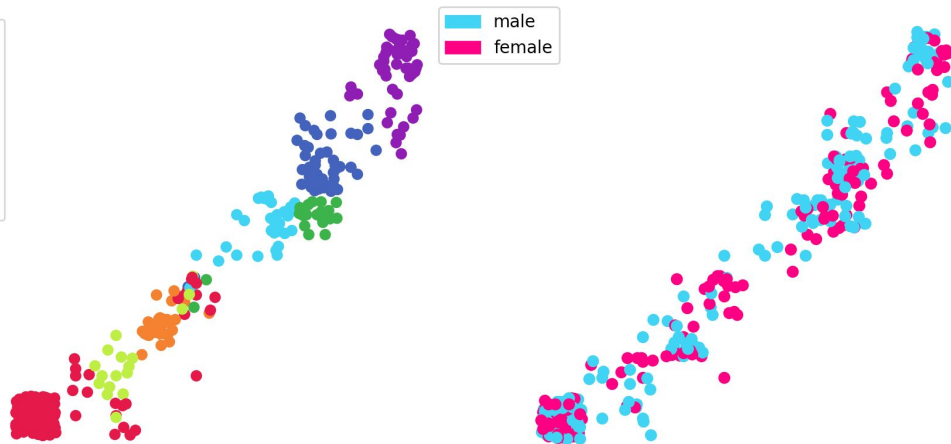# Travelling Salesperson Problem

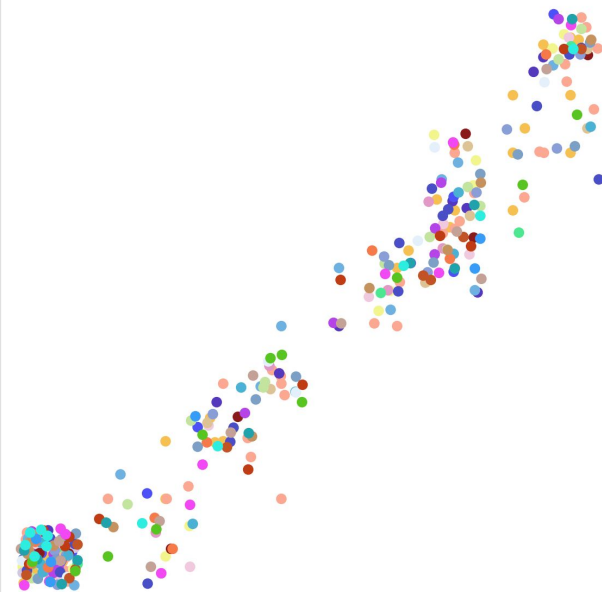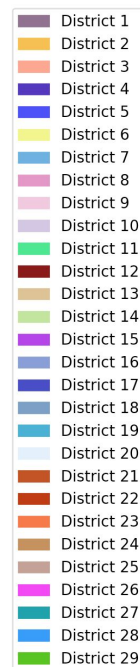# 4.3
Data clustering: votes of MPs

Votes of MPs
By party, gender, and district

Parties

Genders

Districts

None
- m
- fp
- s
- v
- mp
- kd
- c

- male
- female

- District 1
- District 2
- District 3
- District 4
- District 5
- District 6
- District 7
- District 8
- District 9
- District 10
- District 11
- District 12
- District 13
- District 14
- District 15
- District 16
- District 17
- District 18
- District 19
- District 20
- District 21
- District 22
- District 23
- District 24
- District 25
- District 26
- District 27
- District 28
- District 29