

Radial Basis Function Lab

In this lab we will solve some problems using the Radial Basis Functions.

1. Classification of our old data set. The function desired is from \mathbb{R}^2 to \mathbb{R} , so below we write (x, y) and label.

x	y	label
1	1	1
1	2	1
2	-1	2
2	0	2
-1	2	3
-2	1	3
-1	-1	4
-2	-2	4

We will use one “center” per class- 4 total. Take the centers as the average in each class:

	x	y
Center 1	1	1.5
Center 2	2	0.5
Center 3	-1.5	1.5
Center 4	-1.5	-1.5

Write a script file (using `edm2.m`) that will:

- Write the data as X (size 8×2)
- Compute the EDM.
- Use a Gaussian transfer function. Be able to easily change the width. Remember to include a column of ones (Your transfer matrix will be 8×5).
- Compute the model coefficients.
- Plot the result in \mathbb{R}^3 .