

Laboratory 6 — Pattern Recognition (EC-416)

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Overview

Create some regular and irregular hexagons. A Hexagon can be represented by its 6 points and each point can be represented by 2 (x, y) coordinates. So a single hexagon can be represented as a $(6, 2)$ matrix.

Create 10 regular and 10 irregular hexagons of different shapes and size, with different positions on the euclidean plane. Between each pair of hexagons compute the Mahalanobis Distance.

Optionally you can also compute the Bhattacharyya distance and Hausdorff distance.

Refer Section (2.3) of the book Pattern Recognition and Machine Learning by Bishop.

Data

Create your own hexagons, 10 regular and 10 irregular.

Submission Format

1. You can use either Python 3 or MATLAB/Octave to solve this assignment.
2. This is a programming assignment and nothing needs to be hand written.
3. The code of this assignment must be submitted as a project in a zip file with clear instructions on how to run the main file or it can even be a Jupyter Notebook with clear code + output.