# מספר איטרציות

embed(data, epochs=50, p=1, q=1, embedding\_dim=128, walk\_length=20, walks\_per\_node=10, verbose=True)

Epoch: 00, Loss: 8.4526

Epoch: 01, Loss: 5.6775

Epoch: 02, Loss: 3.8512

Epoch: 03, Loss: 2.8655

Epoch: 04, Loss: 2.2509

Epoch: 05, Loss: 1.8438

Epoch: 06, Loss: 1.5736

Epoch: 07, Loss: 1.4028

Epoch: 08, Loss: 1.2917

Epoch: 09, Loss: 1.2219

Epoch: 10, Loss: 1.1778

Epoch: 11, Loss: 1.1472

Epoch: 12, Loss: 1.1272

Epoch: 13, Loss: 1.1130

Epoch: 14, Loss: 1.1036

Epoch: 15, Loss: 1.0963

Epoch: 16, Loss: 1.0916

Epoch: 17, Loss: 1.0865

Epoch: 18, Loss: 1.0815

Epoch: 19, Loss: 1.0782

Epoch: 20, Loss: 1.0787

Epoch: 21, Loss: 1.0749

Epoch: 22, Loss: 1.0730

Epoch: 23, Loss: 1.0727

Epoch: 24, Loss: 1.0707

Epoch: 25, Loss: 1.0700

Epoch: 26, Loss: 1.0692

Epoch: 27, Loss: 1.0679

Epoch: 28, Loss: 1.0668

Epoch: 29, Loss: 1.0665

Epoch: 30, Loss: 1.0676

Histogram

Description automatically generated

מסקנה- אחרי 20 איטרציות שיפורים זניחים – לבדיקות נשתמש ב20 איטרציות

# P q

ps = np.linspace(0.01, 4, 4)

qs = np.linspace(0.01, 4, 4)

other\_hyperparams = {

      "epochs": 20,

      "embedding\_dim": 128,

      "walk\_length": 20,

      "walks\_per\_node": 10

}

test\_p\_q(G, data, gaf\_data, "k\_means", other\_hyperparams, ps, qs)

Shape, square

Description automatically generated

winning\_params=[0.01 1.34], max score=16.92841793620527

hyperparams=({'epochs': 20, 'p': 0.01, 'q': 1.34, 'embedding\_dim': 128, 'walk\_length': 20, 'walks\_per\_node': 10}, {'clustering\_alg': 'k\_means', 'n\_clusters': 200, 'batch\_size': 100})

Shape, square

Description automatically generated

winning\_params=[1.34 2.67], max score=14.457333533906713

hyperparams=({'epochs': 20, 'p': 1.34, 'q': 2.67, 'embedding\_dim': 128, 'walk\_length': 20, 'walks\_per\_node': 10}, {'clustering\_alg': 'k\_means', 'n\_clusters': 200, 'batch\_size': 100})

בדקתי את המימד

Shape, square

Description automatically generated

Shape, square

Description automatically generated

Shape, square

Description automatically generated

winning\_params={'p': 0.01, 'q': 4.0, 'embedding\_dim': 256.0}, max score=25.131228874756587

hyperparams=({'epochs': 20, 'p': 0.01, 'q': 4.0, 'embedding\_dim': 256.0, 'walk\_length': 20, 'walks\_per\_node': 10}, {'n\_clusters': 200, 'batch\_size': 100, 'clustering\_alg': 'k\_means'})

Shape, square

Description automatically generated

Square

Description automatically generated with medium confidence

Shape, square

Description automatically generated

winning\_params={'p': 1.34, 'q': 8.0, 'embedding\_dim': 1024.0}, max score=52.62817385069083

hyperparams=({'epochs': 20, 'p': 1.34, 'q': 8.0, 'embedding\_dim': 1024.0, 'walk\_length': 20, 'walks\_per\_node': 10}, {'n\_clusters': 200, 'batch\_size': 100, 'clustering\_alg': 'k\_means'})