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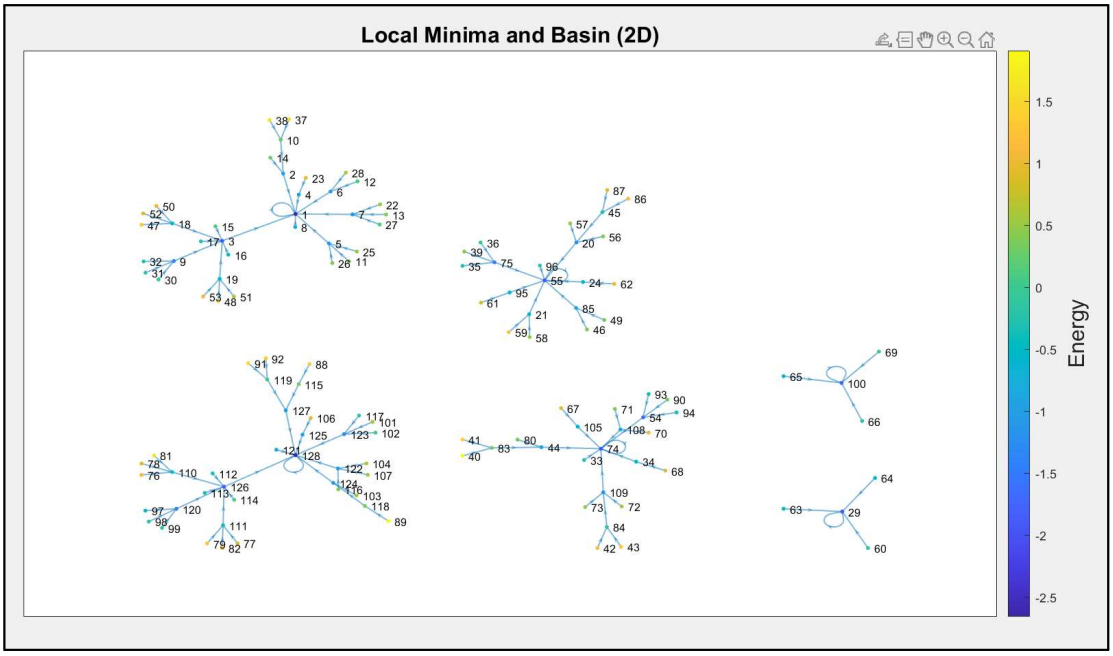
CMSC 691: Neural Eng Assignment 4

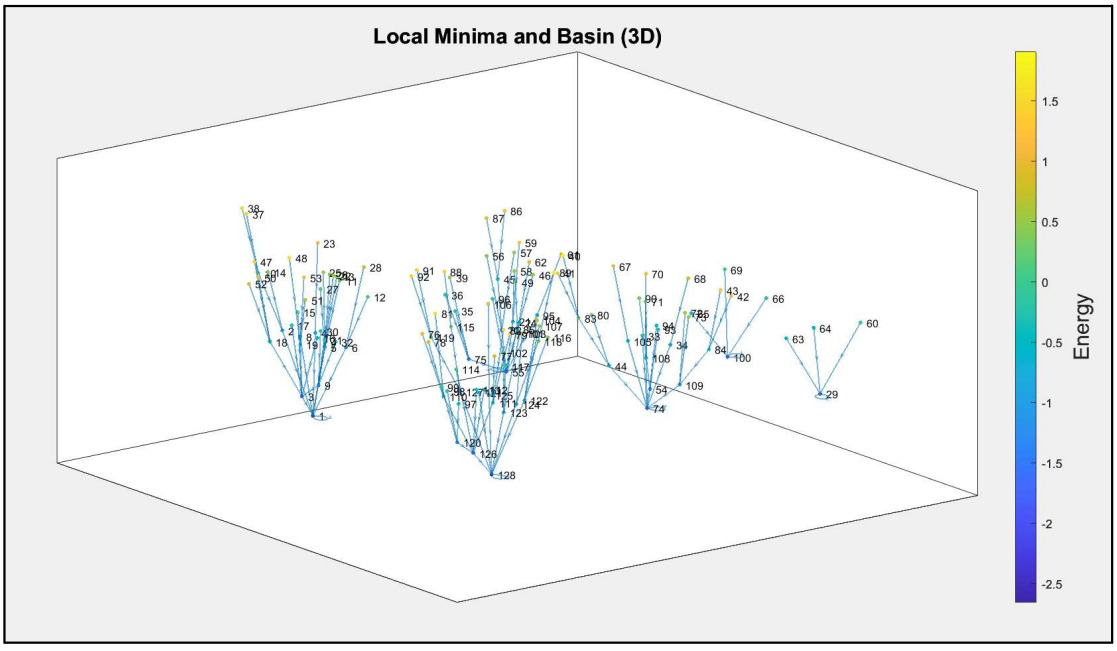
Main code:

```
%% Main 2016/11/14 by T. Ezaki
%% This program estimates a maximum entropy distribution
%% using the maximum-likelihood method.

clc;
close;
clear;

threshold =0.0; %for binarization, above (below) which ROI activity is defined
to be +1 (-1).

Name = [];

% import data: nodeMax x time points
originalData= importdata('testdata.dat');

%%binarize
binarizedData = pfunc_01_Binarizer(originalData,threshold);

%%main part
[h,J] = pfunc_02_Inferrer_ML(binarizedData);
%%[h,J] = pfunc_02_Inferrer_PL(binarizedData);

[probN, prob1, prob2, rD, r] = pfunc_03_Accuracy(h, J, binarizedData);

%% Following functions to be completed by students

% Calculate Energy:
Energy=mfunc_Energy(h,J);

% Calculate Local Minima:
nodeNumber = length(h);
[LocalMinIndex, BasinGraph, AdjacentList]=mfunc_LocalMin(nodeNumber,Energy);

% Calculate Energy Path by Djkstra:
[Cost, Path] = mfunc_DisconnectivityGraph(Energy, LocalMinIndex,
AdjacentList);

% Show Activity Pattern:
vectorList = mfunc_VectorList(nodeNumber);
```

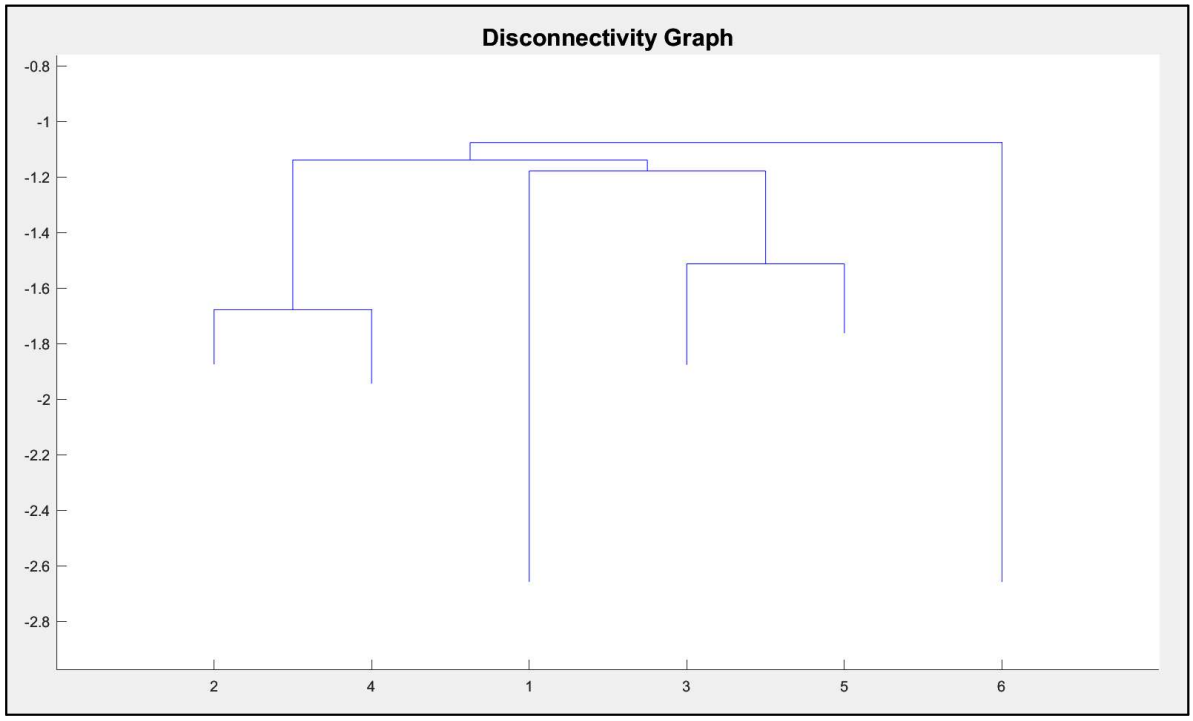
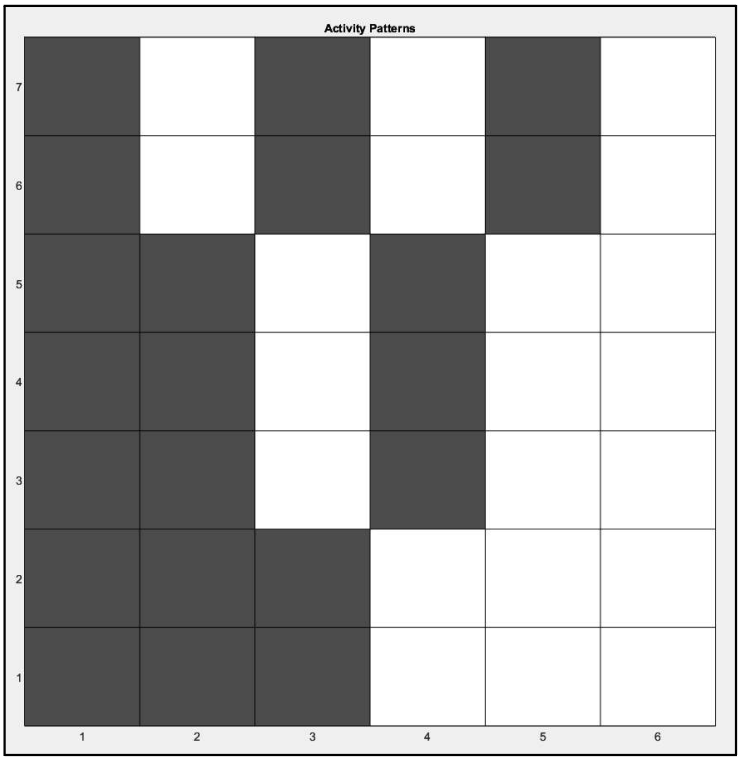
```
mfunc_ActivityMap(vectorList, LocalMinIndex, Name);
disp('ended')
```

Output:





Energy Path:



Activity Pattern: