GEMF animation module Manual

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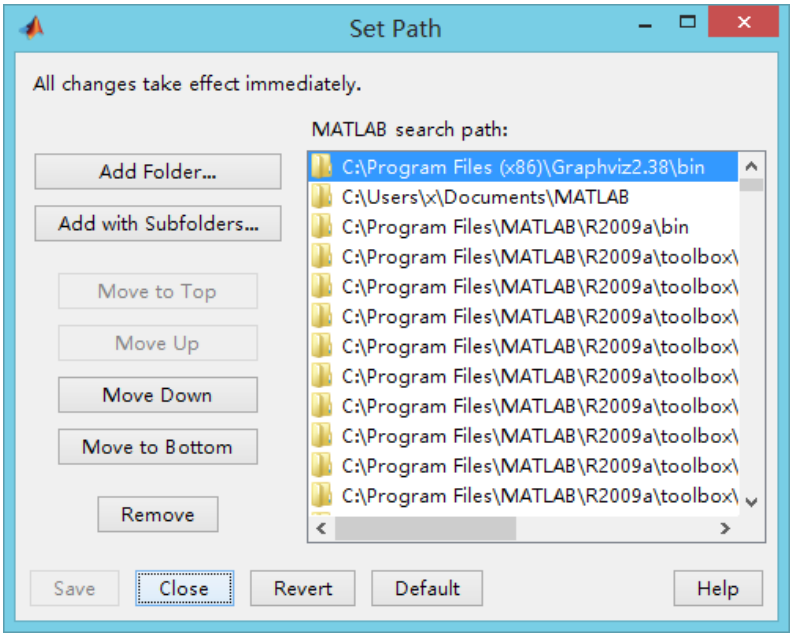
1. Preparation:
   a) Download and install GraphViz. A latest version can be found on http://www.graphviz.org/Download..php . Choose “Stable and development Windows Install packages”, and download the msi installer version. Stable release is recommended.
   b) Add GraphViz bin directory to Matlab PATH:
      i. Find the bin directory of GraphViz. By default, it’s located in C:\Program Files (x86)\Graphviz2.38\bin
      (You may have a different version number)
      ii. In Matlab, click menu File -> Set Path. Click “Add Folder” and choose the directory above, and then save.



      If you are prohibited to do so, run Matlab as Administrator.
   c) Add GraphViz to your system PATH: (Not sure if necessary but highly recommended)
      Right click on “Computer”, then choose “Properties”. Click “Advanced system setting” in the left column. Click “Environment Variables” at the bottom. Find “Path” in system variables, double click it, and add “;C:\Program Files (x86)\Graphviz2.38\bin” at the end of Variable value (without quote, NOTICE the semicolon at the front).
   d) You are all set. Test your configuration by type
      `system('dot -V');`
      in Matlab (Type the single quotes manually; Microsoft Word changes the single quotes). You will see:

```
>> system('dot -V');
dot - graphviz version 2.38.0 (20140413.2041)
```

2. Generate images:
   a) Files

      This Module contains 5 files: DrawAll.m, DrawImgs.m, DrawSingle.m, ModifyMod.m, NetAdj_Gen.m . The entrance in DrawImgs.m . You need not call the other functions directly.

      You can also copy these files to Faryad's project folder, and it will work as long as you put this line somewhere in GEMF_main.m, when Net1 and Net2 are generated:

      `L1 = NetAdj_Gen(Net1); L2 = NetAdj_Gen(Net2);`

   b) Command

      Using it is simple. First you should run

      `GEMF_main`

      After that, you can run a single command to generate all the images:

      `DrawImgs(L1,X0,n_index,i_index,j_index,ts,600);`

      It will take a while.

      The only two parameters you can change are: L1 and 600. Change L1 to L2 (or other network adjacency list) to specify the topology, and change 600 to control the number of pics you would like to generate. In other words, it controls sampling frequency. 600 means generating 600 images for this run.

   c) Usage

DrawImgs.m	Entrance.
DrawSingle.m	It generates a file with all coordinates for future use.
DrawAll.m	Based on the coordinates file, draw all images one by one.
ModifyMod.m	Make slightly change on graph source file to change color.
NetAdj_Gen.m	Generate adjacency lists which are easier to play with.

3. Generating Animated GIF:

   For now, I'm using a small software that helps generating animated gif using static images. But the software is not as good as I expect, since it takes too long to generate an animated graph. I'm still looking for a better solution.