USER GUIDE FOR THE ATCLM SYSTEM

This file is a user guider for the ATCLM algorithm proposed in the paper:

Hong Yu, Xincheng Wang, Guoyin Wang, Xianhua Zeng,An active three-way clustering method via low-rank matrices for multi-view data, Information Sciences 507 (2020) 823–839. https://doi.org/10.1016/j.ins.2018.03.009.

You can find the environment configuration and the instructions.

❖ ENVIRONMENTAL CONFIGURATION

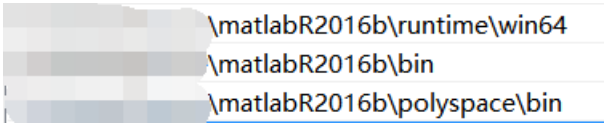
In the current version, only users with **window 10 versions for x86** are supported.

The data sources are introduced in the paper, you can download by accessing to the Internet. The input file of the ATCLM system are in format of TXT. A TXT file represents a view data, and the last column is the ground truth classification label for the samples.

1) The First Case.

If your computer is properly installed with the MATLAB R2016b and the runtime environment for MATLAB R2016b is configured correctly, you can download the file named "**atclm_win_10_64.zip"**.

If you find that you cannot run the system, please check your system environment for MATLAB R2016b. The configuration information should be:



If you still find that the system doesn't work after completing all the above steps correctly, you can add the path like "**the installation path of MATLAB R2016b\extern\lib\win64\MICROSOFT**" to your system environment and then restart your computer.

2) The Second Case.

If MATLAB R2016b is not installed on your computer, please download the file named "**atclm_win_10_64_matlab.zip**" and then extract the downloaded file to the specified directory, such as "D:\actlm".

Configure the environment variables named "Path" required for the system. An example is shown below.

*** D:\atclm\v91\runtime\win64**

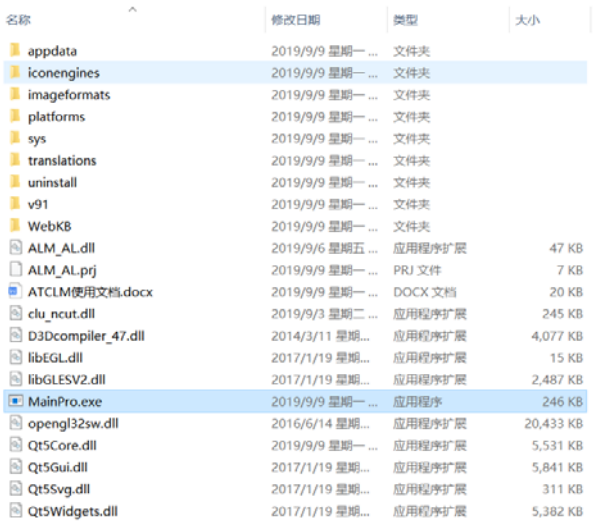
*** D:\atclm\v91\bin**

*** D:\atclm\v91\extern\lib\win64\microsoft**

Then, restart your computer.

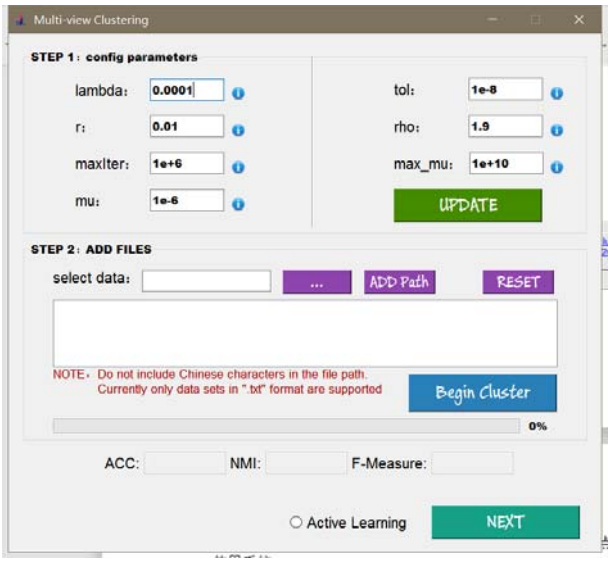
❖ THE ATCLM SYSTEM INSTRUCTIONS

You can double-click the file named "**MainPro.exe**" to start the ATCLM system.



名称	修改日期	类型	大小
appdata	2019/9/9 星期一 ...	文件夹	
iconengines	2019/9/9 星期一 ...	文件夹	
imageformats	2019/9/9 星期一 ...	文件夹	
platforms	2019/9/9 星期一 ...	文件夹	
sys	2019/9/9 星期一 ...	文件夹	
translations	2019/9/9 星期一 ...	文件夹	
uninstall	2019/9/9 星期一 ...	文件夹	
v91	2019/9/9 星期一 ...	文件夹	
WebKB	2019/9/9 星期一 ...	文件夹	
ALM_AL.dll	2019/9/6 星期五 ...	应用程序扩展	47 KB
ALM_AL.prj	2019/9/9 星期一 ...	PRJ 文件	7 KB
ATCLM使用文档.docx	2019/9/9 星期一 ...	DOCX 文档	20 KB
clu_ncut.dll	2019/9/3 星期二 ...	应用程序扩展	245 KB
D3Dcompiler_47.dll	2014/3/11 星期...	应用程序扩展	4,077 KB
libEGL.dll	2017/1/19 星期...	应用程序扩展	15 KB
libGLESV2.dll	2017/1/19 星期...	应用程序扩展	2,487 KB
MainPro.exe	2019/9/9 星期一 ...	应用程序	246 KB
opengl32sw.dll	2016/6/14 星期...	应用程序扩展	20,433 KB
Qt5Core.dll	2019/9/9 星期一 ...	应用程序扩展	5,531 KB
Qt5Gui.dll	2017/1/19 星期...	应用程序扩展	5,841 KB
Qt5Svg.dll	2017/1/19 星期...	应用程序扩展	311 KB
Qt5Widgets.dll	2017/1/19 星期...	应用程序扩展	5,382 KB

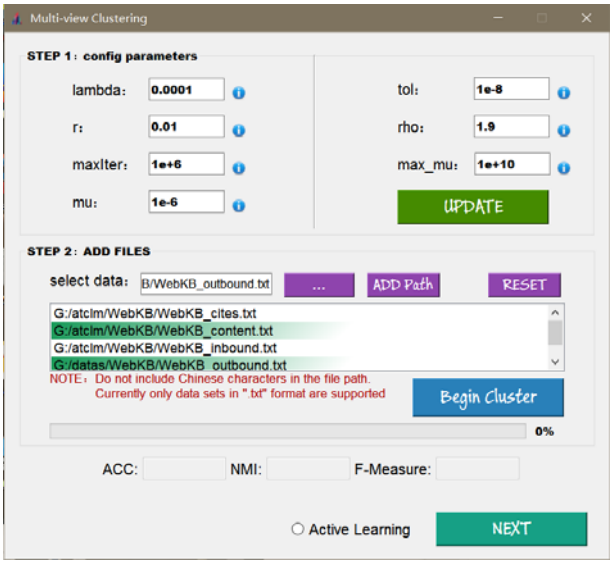
If you try to download the paper, you can click the link.



The corresponding information about the parameters used in the paper and the system are shown in the following table.

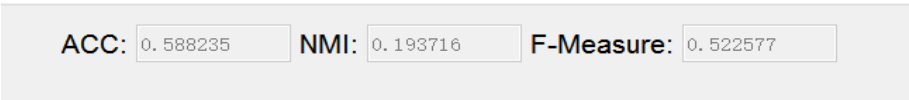
In System	In Paper	Description
lambda	λ	Balance parameters to control the effects of noise.
r	γ	Scale parameters to avoid over-fitting on a view.
maxIter		Maximum number of iterations in the algorithm.
tol		The minimum error accuracy of the algorithms.
rho		The growth step of scale parameters
max_mu	max_ μ	Maximum number of adaptive penalty parameter.
mu	μ	Adaptive penalty parameter.

Note: Please do not put the organized data under the path containing Chinese characters.

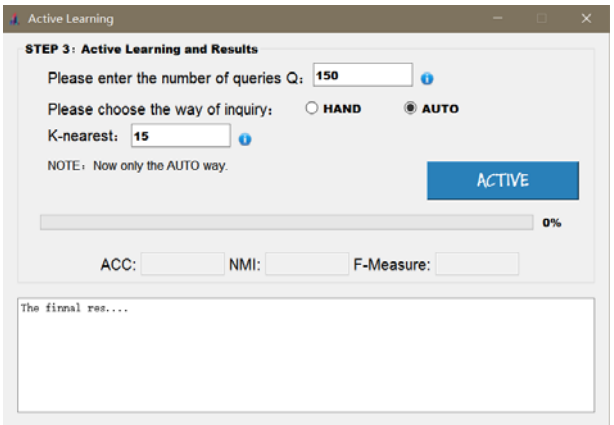


Click the “Begin Cluster” button to execute the algorithm.

The final result of the algorithm will be shown in text-box like the following:

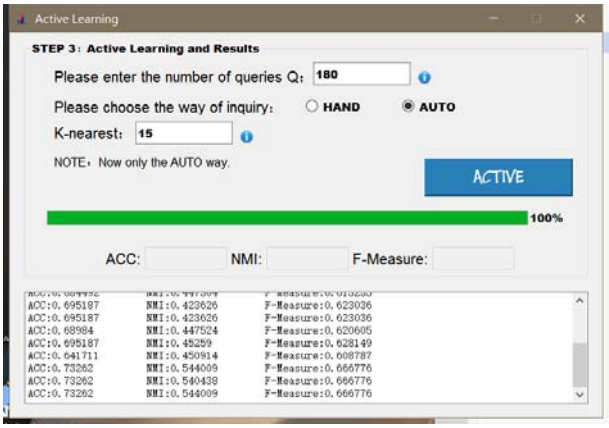


Next is the active learning processing of the paper.



The parameters used in the part of the paper are shown in the following table.

In System	In Paper	Description
Q	Q	The maximum number of queries.
K-nearest	K_nearest	Scope parameters are used to extend core domain and edge domain.



Note: The number of queries will be consumed when the algorithm is executing. So there may be a case when initializing the core domain and expanding the edge domain, the number of queries are exhausted, resulting in the algorithm doesn't work.