Installation Instructions

The constraint-based GA is implemented using Matlab neural network toolbox, Matlab Genetic Algorithm toolbox of Sheffield University, ECLiPSe constraint logic programming system and java.

The Matlab code svr.m runs the RBF kernel SVR of LIBSVM to predict break size.

1. Download and install the Matlab Genetic Algorithm toolbox.

<http://codem.group.shef.ac.uk/index.php/ga-toolbox>

1. Download and install ECLiPSe CLP.

<http://eclipseclp.org/>

1. Download and install java Runtime Environment if java is not installed on your platform.

<http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html>

In ga\_fs\_top\_cpmutate.m, set the correct paths to java and ECLiPSe in the following commands:

cmd=char(string('C:\Users\tian03\Downloads\jre1.8.0\_102\bin\java -cp eclipse.jar;. -Declipse.directory="C:\Program Files\ECLiPSe 6.1" CallCP2 ')+string(architectures)+string(' ')+string(min\_nodes)+string(' ')+string(max\_nodes)+string(' nearest\_neighbours'));

cmd=char(string('C:\Users\tian03\Downloads\jre1.8.0\_102\bin\java -cp eclipse.jar;. -Declipse.directory="C:\Program Files\ECLiPSe 6.1" CallCP ')+string(networks\_inputs)+string(' initialnetworks'));

1. Download and install LibSVM.

<https://www.csie.ntu.edu.tw/~cjlin/libsvm/>

Change the path "C:\Users\tian03\Downloads\libsvm-3.22\windows\svm-train" in svr.m to the directory of LIBSVM on your system.

Change the path "C:\Users\tian03\Downloads\libsvm-3.22\windows\svm-predict" in svr.m to the directory of LIBSVM on your system.