To run this code, the users first have to install “Eigen” which is a C++ package. For Ubuntu users it can be easily done by running the following command:

sudo apt-get install libeigen3-dev

Add the include path of Eigen. You can do this by running the following command:

sudo ln -s /usr/include/eigen3/Eigen /usr/local/include/Eigen

or

sudo mv /usr/include/eigen3/Eigen /usr/local/include/Eigen

To speed up the code, we use “openmp” for parallel computing. You need to run the following command to generate the executable file.

g++ -fopenmp COX\_L21\_main\_strong.cpp -o name\_executable

Now you are ready to run the experiment, this algorithm has 13 arguments:

* file name of the training dataset in source domain.
* file name of the training dataset in target domain.
* file name of the testing dataset in target domain.
* number of instances of the training dataset in source domain.
* number of instances of the training dataset in target domain.
* number of instances of the testing dataset in target domain.
* number of features
* maximum iteration
* weight of target dataset
* multiplier of L2 norm
* number of \lambda you want to search
* : the smallest searching \lambda ‘s multiplier ( )

Note: The training and testing files are both in ".csv" format. Where each instance is represented as a row in file and the last two columns are survival times and censored indicators, respectively. Please refer to “Source\_train.csv” to check the format.

You can run the command code as a toy example:

./name\_executable Source\_train.csv Target\_train.csv Target\_test.csv 76 76 39 552 100 2 0 0.0001 100 0.05

And the prediction results are stored in “Source\_train.csv\_record\_new.txt” is generated by running the above command code. In “Source\_train.csv\_record\_new.txt”, each column corresponds to a \lambda, and each column has 56 elements:

|  |  |
| --- | --- |
| Row.1 | lambda |
| Row.2 | The value of objective function |
| Row.3 | The value of the smooth part of the objective function |
| Row.4 | Number of features left after run the strong rule |
| Row.5 | C-index |
| Row.6 | Number of non-zero coefficients |
| Row.7—56 | The index of top 50 selected features |