(1) EventMigrationRecom(July2022).

**Note: When you run on NepalEQuake dataset, #define TUNUM 135783 should be set in GlobalStructureVar.h.**

**When you run on TexasFlood dataset,** **#define** **TUNUM** **64240** **should be set in GlobalStructureVar.h.**

a)Sample bat files for migrating event detection:

* For NepalEQuake dataset
  + RunEM(ConceptNet+Tau(No-Hausdrof)+R(Hausdrof)+Mig(Pri)\_Nepal\_Ttransfer\_NoHashTagMerge.bat
* For TexasFlood dataset
  + RunEM(ConceptNet+Tau(No-Hausdrof)+R(Hausdrof)+Mig(Pri)\_Texas\_Ttransfer\_NoHashTagMerge.bat

Command parameter instruction:

* ..\x64\debug\EventMigrationRecom.exe -em napelDataTestFlist(April25-May1).txt

-pa Nepal\_data\resNoSamplingVar09\_filtered\_earthquake\_4GramFeatures\_TimeTransferred\ /\*path of data features\*/

-op DetectionResultFold /\*the path of the output files\*/

-uip NepalUserInfluences010 /\*the path of user influence files\*/

-ext .dat /\*extension of input feature files \*/

-mt 0.01 /\* migrating indicator. 0 means no migration considered. >0 means migration considered \*/

-tau 2 /\* the threshold for time uncertainty \*/

-r 120 /\*SPACERADIUST default value \*/

-elip 0.01 /\* event similarity threshold, <0.01 means dissimilar \*/

-MC 6 /\*similarity function selection. 6 means to fuse content, time and location with weights\*/

-omeg1 0.7 /\*default weight value $\omega\_1$ in equation 7 \*/

-omeg2 0.1 /\*default weight value $\omega\_2$ in equation 7 \*/

-migalp 0.7 /\* weight value α in equation 11. 0.0 is to ignore migration, 0.7 is default value for migration\*/

-K 100 /\* top 100 similar clusters are considered as relevant \*/

-wuipv 1.0 /\* value to form influence file names \*/

-sd 1 /\* option for dynamic or static. 0: static, 1: dynamic. Default is 1 for dynamic \*/

In sample bat files, you only need to change the followings to fit your file paths. For other parameter values, just keep my setting in sample bat files.

..\x64\debug\EventMigrationRecom.exe -em … -pa … -op … -uip …

b) sample bat files for event recommendation

* For NepalEQuake dataset
  + RunERecNEW\_Ttransfer\_Nepal\_NoHashtagMerge\_RecentHistTimePeriod.bat
* For TexasFlood dataset
  + RunERecNEW\_Ttransfer\_TexasFlood\_NoHashtagMerge\_RecentHistTimePeriod.bat

Command parameter instruction:

* ..\x64\debug\EventMigrationRecom.exe -er napelDataTestFlist(April25-May1).txt

-pa \ForRec\Nepal\_UserHistUP\_ConceptNoHashTagMerge\ /\*path of event summaries\*/

-op \ForRec\RecommendationTest\ConceptNoHashTagMerge\ /\*the path of the output files\*/

-uip ..\..\Datasets\NepalUserInfluences010\ /\*the path of user influence files\*/

-uif UserInfluDictfile\_Nepal010(Training15April-24April).txt /\*user influence file over training data \*/

-ul NepalUserProfile(Training15April-24April).txt /\*user profile information file over training data \*/

-upp ..\..\Datasets\NepalUserProfileResults\ /\*user profiles information files on dynamic updates \*/

-ext .UPdata /\*extension of input files \*/

-mt 1 /\* migrating indicator. 0 means no migration considered. >0 means migration considered \*/

-tau 2 /\* the threshold for time uncertainty \*/

-elip 0.002 /\* event similarity threshold, <0.01 means dissimilar \*/

-MC 1 /\*similarity selection. 1 means content only, 6 means to fuse content, time, location with weights\*/

-omeg1 0.7 /\*default weight value $\omega\_1$ in equation 7 \*/

-omeg2 0.1 /\*default weight value $\omega\_2$ in equation 7 \*/

-migalp 0 /\* weight value α in equation 11. 0.0 is to ignore migration, 0.7 is default value for migration\*/

-K 500 /\* top 100 relevant users are considered \*/

-wuipv 1.0 /\* value to form influence file names \*/

-coup 0 /\* to hide redundant code \*/

-histTP 84 /\*keep all visited clusters in user history \*/

-sd 1 /\* option for dynamic or static. 0: static, 1: dynamic. Default is 1 for dynamic \*/

In sample bat files, you only need to change the followings to fit your file paths. For other parameter values, just keep my setting in sample bat files.

..\x64\debug\EventMigrationRecom.exe -er … -pa …-op …-uip …-upp …

(2) DataPreprocessing (this program is to do the statistics of event detection performance, Pmiss and Pfa)

Bat files

BatchRunCGT(ConceptNet+Tau(No-Hausdrof)+R(Hausdrof)+Mig(Pri)\_Texas\_Ttransfer\_NoHashtagMerge\_PVLDBTest.bat

BatchRunCGT(ConceptNet+Tau(No-Hausdrof)+R(Hausdrof)+Mig(Pri)\_Nepal\_Ttransfer\_NoHashtagMerge\_PVLDBTest.bat

Command parameter instruction: you only need to change the following parameter values to fit your file paths and file names. For other parameter values, just keep my setting in sample bat files.

-cgt .. -pa .. -op ..

(3) EventRecEvaluationClean. (this program is to do the statistics of event recommendation performance)

Bat files

NepalRunTP84user\_Top20.bat

NepalRunTP84user\_Top20NoDynamicUpdate.bat

TexasRunTP84user\_Xi7LocFilter(May22-June5GT)Top20.bat

TexasRunTP84user\_Xi7LocFilter(May22-June5GT)Top20NoDynamicUpdate.bat

Command parameter instruction: you only need to change the following parameter values to fit your file paths and file names. For other parameter values, just keep my setting in sample bat files.

-rrp .. -hup .. -ffp ..

Here: -rrp is followed by Recommendation Result Path. -hup is followed by history user profile path; -ffp is followed by the path of all feature files.

(4) SocialEventRecommendation-master-Emily.rar. Code for event recommendation on Spark. You need to install Apache Spark, Java, Hadoop for windows.

org.turningme.theoretics.StaticSimilarityJoin. then entrance.

Note that StaticSimilarityJoin.scala file is actually for continuous event recommendation. In recommendation, the paths for input files needs to to changed in code based on the path of these files.

Other Scala files are just drafts that were not related to this paper or workable, but we may use them for future development. So please donot touch them.

Parameter setting instruction: you need to change the following parameter values to fit your file paths and file names, and different datasets.

Parameters to set:

* For NepalEQuake dataset
  + In StaticSimilarityJoin.scala, object StaticSimilarityJoin, there are three prameters to set:
    - **val** alpha = 0.7f;
    - **val** SimiThreshold = 0.3f;
    - **val** parnum=10;
  + In PreprocessingHelperContinuous.java, the following parameters to set:
    - In class PreprocessingHelperContinuous:
      * String userProfilePath=”…./UserInfluDictfile\_Nepal010(Training15April-24April).txt” /\* keep user influence information. You need to input the path before the file name \*/
      * String userProfileInfoPath=”… /NepalUserProfile(Training15April-24April).txt" /\*keep the user profile information. You need to input the path before the file name \*/
      * String SlotPartitionFileName=”…/ napelDataTestFlist(April25-May1).txt.UPPWhole” /\*keep the partition file information. You need to input the path for partitions. Subfold names indicates the partition method and partition number. For example, “Nepal\_UserHistUP\_ConceptTimeLocationMigNoHashTagMerge\_TFIDFNormalize\_Partition\_ContentHP” is for partition to 10 processors using HP partition algorithm “Nepal\_UserHistUP\_ConceptTimeLocationMigNoHashTagMerge\_TFIDFNormalize\_Partition\_ContentAngleMixedHashKMeans” is for partition to 10 processors using LSH-T partition method. “Nepal\_UserHistUP\_ConceptTimeLocationMigNoHashTagMerge\_TFIDFNormalize\_8Partition\_ContentHP” is for partition to 8 processors using HP partition algorithm. “Nepal\_UserHistUP\_ConceptTimeLocationMigNoHashTagMerge\_TFIDFNormalize\_8Partition\_ContentAngleMixedHashKMeans” is for partition to 8 processors using LSH-T partition method.
      * int numofGroups = 10; /\*how many processors will be used, the value should equal parnum in StaticSimilarityJoin.scala \*/
    - In public PreprocessingHelperContinuous preLoadMessageData(int index) function, need to input the feature file path.
      * For variable files, and FullSlotFileName. featurefilePath=“…/Nepal\_UserHistUP\_ConceptTimeLocationMigNoHashTagMerge\_TFIDFNormalize/". You need to add the complete path of the feature files
    - In public PreprocessingHelperContinuous preLoadUpdateStatisticsData(int index ) function, need to input the path of partition file for continuous recommendation
      * For variables files and FullSlotPartitionFileName. partitionfilePathContinuous=“…./Incoming/”. You need to add the complete path of the partition files.
    - In public PreprocessingHelperContinuous updateUsrProfileUpdates(int index) function, need to input the path of user influence information.
      * For variables files and FullSlotPartitionFileName. UserinfluencePath=“…/NepalUserInfluences010/Incoming/”. You need to add the complete path of the user influence information.
  + In parameters.java
    - **public static float** *ALPHA*=0.7f;
    - **public static int** *TUNUM*=135782;
    - **public static float** *TIMERADIUST*=2.0f;
    - **public** **static** **float** *omeg1*=0.7f;
    - **public** **static** **float** *omeg2*=0.1f;
* For TexasFlood dataset
  + In StaticSimilarityJoin.scala, object StaticSimilarityJoin, there are three prameters to set:
    - **val** alpha = 0.6f;
    - **val** SimiThreshold = 0.3f;
    - **val** parnum=10; //the number of processors/partitions to use
  + In PreprocessingHelperContinuous.java, the following parameters to set:
    - In class PreprocessingHelperContinuous:
      * String userProfilePath=”…./ UserInfluDictfile\_TexasFlood010(Training12-21May).txt” /\* keep user influence information. You need to input the path before the file name \*/
      * String userProfileInfoPath=”… / TexasFlood\_UserProfileResult(Training12May-21May).txt " /\*keep the user profile information. You need to input the path before the file name
      * String SlotPartitionFileName=”…/TexasFloodDataFlist(22-28May).txt.UPPWhole” /\*keep the partition file information. You need to input the path for partitions. Subfold names indicates the partition method and partition number. For example, “Texas\_UserHistUP\_ConceptTimeLocationMigNoHashTagMerge\_TFIDFNormalize\_Partition\_ContentHP” is for partition to 10 processors using HP partition algorithm “Texas\_UserHistUP\_ConceptTimeLocationMigNoHashTagMerge\_TFIDFNormalize\_Partition\_ContentAngleMixedHashKMeans” is for partition to 10 processors using LSH-T partition method.
      * int numofGroups = 10; /\*how many processors will be used, the value should equal parnum in StaticSimilarityJoin.scala \*/
    - In public PreprocessingHelperContinuous preLoadMessageData(int index) function, need to input the feature file path.
      * For variable files, and FullSlotFileName. featurefilePath=“…/Texas\_UserHistUP\_ConceptTimeLocationMigNoHashTagMerge\_TFIDFNormalize/". You need to add the complete path of the feature files
    - In public PreprocessingHelperContinuous preLoadUpdateStatisticsData(int index ) function, need to input the path of partition file for continuous recommendation
      * For variables files and FullSlotPartitionFileName. partitionfilePathContinuous=“…./Incoming/”. You need to add the complete path of the partition files.
    - In public PreprocessingHelperContinuous updateUsrProfileUpdates(int index) function, need to input the path of user influence information.
      * For variables files and FullSlotPartitionFileName. UserinfluencePath=“…/TexasUserInfluences010/Incoming/”. You need to add the complete path of the user influence information.
  + In parameters.java
    - **public static float** *ALPHA*=0.6f;
    - **public static int** *TUNUM*= 64240;
    - **public static float** *TIMERADIUST*=8.0f;
    - **public** **static** **float** *omeg1*=0.6f;
    - **public** **static** **float** *omeg2*=0.3f;