package com.twitter.interaction\_graph.scio.common

import com.twitter.interaction\_graph.thriftscala.TimeSeriesStatistics

object InteractionGraphUtils {

final val MIN\_FEATURE\_VALUE = Math.pow(0.955, 60)

final val MAX\_DAYS\_RETENTION = 60L

final val MILLISECONDS\_PER\_DAY = 1000 \* 60 \* 60 \* 24

def updateTimeSeriesStatistics(

timeSeriesStatistics: TimeSeriesStatistics,

currValue: Double,

alpha: Double

): TimeSeriesStatistics = {

val numNonZeroDays = timeSeriesStatistics.numNonZeroDays + 1

val delta = currValue - timeSeriesStatistics.mean

val updatedMean = timeSeriesStatistics.mean + delta / numNonZeroDays

val m2ForVariance = timeSeriesStatistics.m2ForVariance + delta \* (currValue - updatedMean)

val ewma = alpha \* currValue + timeSeriesStatistics.ewma

timeSeriesStatistics.copy(

mean = updatedMean,

m2ForVariance = m2ForVariance,

ewma = ewma,

numNonZeroDays = numNonZeroDays

)

}

def addToTimeSeriesStatistics(

timeSeriesStatistics: TimeSeriesStatistics,

currValue: Double

): TimeSeriesStatistics = {

timeSeriesStatistics.copy(

mean = timeSeriesStatistics.mean + currValue,

ewma = timeSeriesStatistics.ewma + currValue

)

}

}