ALERT SYSTEM FOR TERRORIST ATTACK

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Abstract — The public security field has gained increased attention due to unconventional global emergencies, particularly terrorist attacks. With the frequent occurrence of unconventional global emergencies, the public security field has received more and more attention. As an unconventional emergency, terrorist attacks have aroused global attention. So, how should we extract useful information from a large number of terrorist attacks and find the law of the attack, so that we can effectively prevent or take early measures to reduce losses? We propose a solution to build an application by using categorization and calculation the next type of attack would be in a location.

Technology :Java

I. INTRODUCTION

Terrorism is a significant threat to peace and security worldwide. The Global Terrorism Database shows a significant increase in terrorist attacks since 2005, with 16817 launched in 2014. These attacks have caused significant property damage and casualties, necessitating the development of effective prevention strategies to help governments and police departments prevent such attacks. The number of terrorist attacks has risen by an order of magnitude since 2005.This paper aims to improve the efficiency of handling terrorist attacks by predicting future attacks based on historical records and other available information. It suggests that predicting the next province or state a terrorist organization may attack at a specific time point can help in taking measures to minimize losses.

Numerous studies have been conducted on analyzing terrorism incident data globally. Hawkes Process was used to predict terrorist attacks in Northern Ireland, considering 5000 explosions between 1970-1998. Bayesian Network (DBN) was proposed to predict future attacks, focusing on terrorist behavior at critical transport infrastructure facilities. Social Network Analysis (SNA) was proposed to predict terrorist behavior with 86% accuracy. Recently, a few schemes have been proposed to study location prediction by exploring spatial and temporal patterns of terrorist attacks. Terrorist Group Prediction Model (TGPM) was proposed by Faryal et al. to predict the group involved in a specific attack.

Currently, terrorist analysis solutions have achieved some results, but they do not fully handle noisy data, including missing values and redundant features. They also ignore terrorist attack incident information, such as summary, attack, and weapon information, which is crucial for improving the next location prediction task. For example, in the GTD data source, a "multiple" field records whether an attack incident is related to other incidents, indicating that these incidents are not independent and may lead to

another. To improve the accuracy of predicting terrorist organizations' next attack location, this paper uses Normalized Mutual Information (NMI) to select relevant features for location and proposes a neural network called Attention-based Fused-SpatialTemporal LSTM (ATFST-LSTM) to model spatiotemporal contextual information and terrorist attack incident information. The artificial "attention mechanism" in neural networks is used to capture terrorist organizations' preferences in different weights.

A system is proposed to accurately record, share, and categorize specific types of attacks in a specific region using an android java application for users and police/admin. The system aims to increase transparency, foster trust, strengthen information security, enhance understanding of attack types, and enhance system flexibility.

II. RELATED WORK

The increasing amount of terrorist attack data and the development of big data technology have led to a focus on analyzing this data to conduct targeted prevention and control. Following the 9/11 incident, Edelstein et al. and Derosa et al. proposed techniques to deal with terrorism, and data mining algorithms have become more widely used in anti-terrorism efforts. These studies discuss the collection and processing of terrorist information, the choice of models, risk control of terrorism, and the deepening of the data mining foundation in counter-terrorism.

Terrorist behavior research mainly focuses on the prediction and assessment of terrorist behavior. In 2005, Carley et al. began using dynamic network analysis techniques to study terrorist group behavior. Schrodt et al. used the Hidden Markov model to predict conflict in the Balkans from 1991 to 1999. Reghavan et al. used the hidden Markov model to establish a model for a terrorist organization's activity and detect its sudden situation. Ali et al. used data mining technology to identify terrorist organizations from social network information. Qiang et al. proposed a novel method called Spatial Temporal Recurrent Neural Networks (ST-RNN) to predict the next location for terrorist groups.

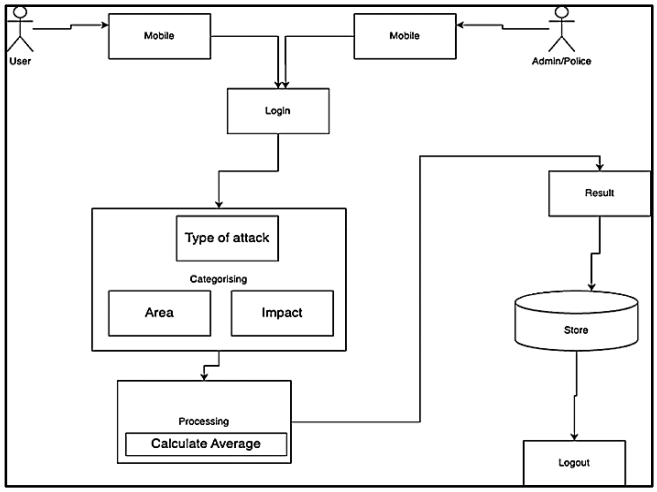
The increasing amount of terrorist attack data and the development of big data technology have led to focus on analyzing this data to identify attack rules for targeted prevention and control. Following the 9/11 incident, Edelstein et al. and Derosa et al. proposed techniques to deal with terrorism, and data mining algorithms have become more widely used in anti-terrorism. These studies discuss the collection and processing of terrorist information, model choice, risk control, and deepening the data mining foundation in counter-terrorism.

Next location prediction, or next POI recommendation, has attracted significant research interest. Existing works typically use Markov chain properties to model sequential patterns of users, such as FPMC-LR, an additive Markov chain model, and a mixed hidden Markov model. Recurrent neural networks are also used for modeling sequential user check-ins, such as RNN and GRU models. ST-RNN is proposed for location prediction, using an RNN architecture to learn sequential transitions, and ATST-LSTM learns non-linear dependency representation over POIs and spatio-temporal contexts from historical check-in activities.

In terrorist attack fields, there is a need for more information about attack incidents, such as summary information, attack information, and weapon information.

III. Proposed Method

A. System Design



B. Implementation

The process involves loading the database.
Initializing the k value, iterating from 1 to the total number of training data points, and calculating the distance between test data and each row of the training dataset using hamming distance, cosine, or Euclidean distance.

The distances are then sorted in ascending order, and the top k rows are obtained.

The most frequent class is found, and the class is returned.

lV. Conclusion

We have implemented the system where user can understand the type of attack and target types can be expected .Tourist and business can take safety measures to prevent attacks.Get real view of risk status.

V. Reference

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