

# VISUALISING TERRORISM

Lim Hui Ting Jaclyn, Liu Jialin, Xi Qiuyun  
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## Motivation

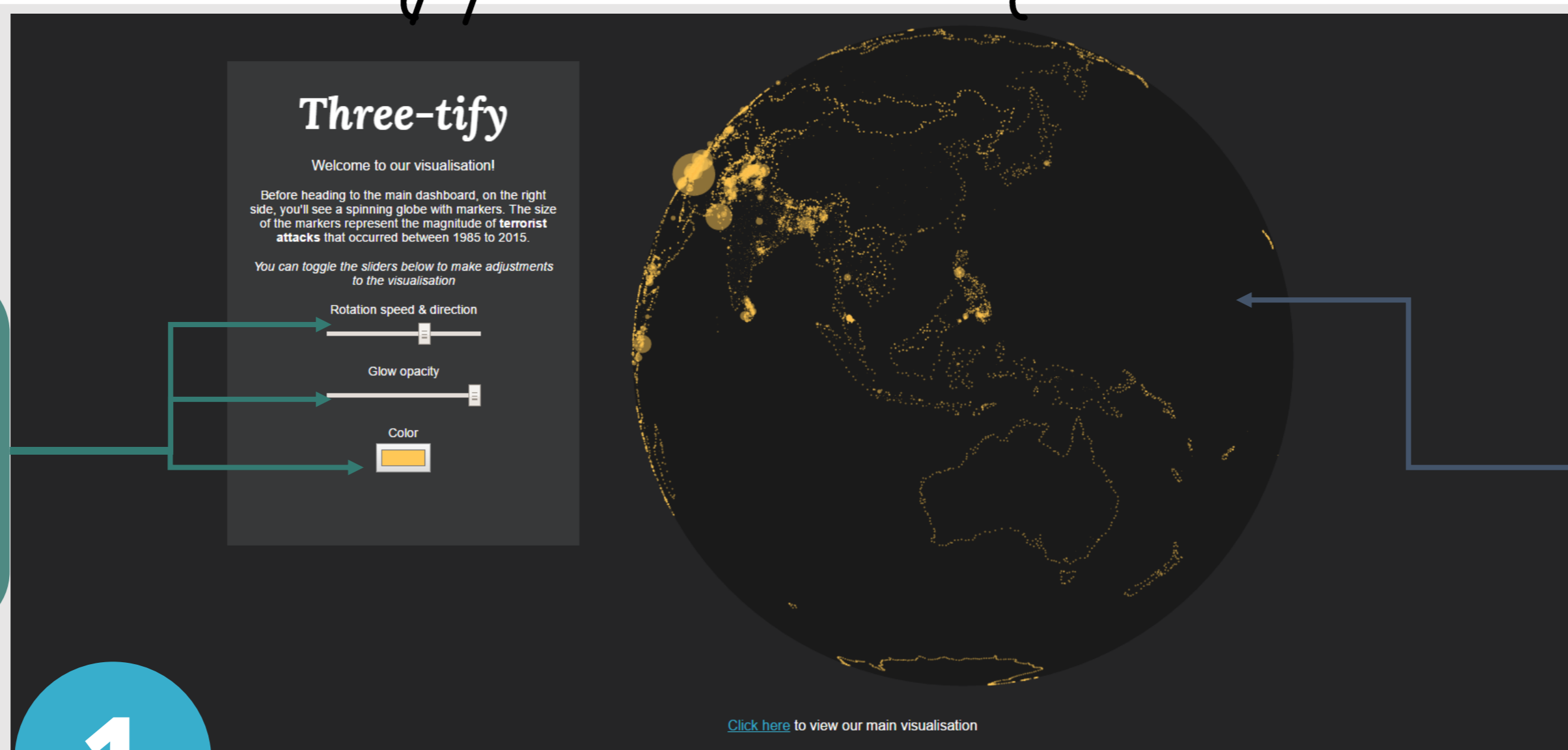
In recent years, terrorism attacks in the western world have been in the centre of focus and have had extensive reporting. However, terrorist attacks in the Middle East, South America, Africa and South Asia often receive much less attention or are even totally neglected. This creates a perspective that is far from the truth.

Due to the uneven media coverage of terrorist attacks all over the world, our project aims to give a holistic presentation of the terrorist attacks that occurred between 1985 and 2015 worldwide.

## Objectives

- To build a visualisation that shows the occurrence of terrorism attacks across time, ranging from 1985 to 2015
- To allow users to understand how terrorist attacks have changed over time, including attack targets and attack methods, with the use of different visualisation techniques and charts
- To have an easy, readable and understandable visualisation that is interactive and allows users to drill down to the facts and details that they are interested in

## Approach & Results



### INTERACTIVE SLIDERS

Drag the sliders to change the speed and direction of rotation, as well as the opacity of the points.

Click on the colour box to change the colour of the points.

### SPINNING GLOBE

A rotating globe that shows the terrorist attacks across the world for the past 30 years. The size of the circle represents the magnitude of attacks.

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## ENTRY PAGE

A visual display of the terrorist attack data on a rotating globe. At the bottom of the page there is a link to the main visualisation dashboard.

### MAP

Shows the locations of the terrorist attacks. The heatmap illustrates the number of attacks in the region.  
*Special packages: leaflet.js, underscore.js, leaflet-heat.js*

### RESET BUTTON

Click to clear all the filters and revert the dashboard back to its initial display.

### INTRO BUTTON

Click to start a step-by-step guide of the features of the dashboard.  
*Special package: intro.js*

### TIMELINE

Shows the time and the number of terrorist attacks that occurred. Drag along timeline to filter the data.  
*Special package: crossfilter.js*

### COUNTRY FILTER

Select from the dropdown menu to view specific attacks in each country.

### TEXT CLOUD

Shows the key words and number of occurrence in the motives of attacks.  
*Special package: echarts.js*

### DETAILS

Shows the number of attacks selected, the number of people killed and injured in the selected attacks.

### ROW CHART - ATTACKS

Shows the number of attacks in a certain category. Click the bars to filter data.  
*Special package: crossfilter.js*

### ROW CHART - TARGETS

Shows the number of attacks to a specific target. Click the bars to filter data.  
*Special package: crossfilter.js*

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## MAIN VISUALISATION

The dashboard allows the user to interactively view the selected terrorist attack records on one screen.

*Basic packages used: D3.js, dc.js, queue.js, Dashboard.js, JQuery.min.js, Skel.min.js, Skel-panels.min.js, Init.js*

### LEGEND

Interactive  Information Display

## Main Insights

- There has been an increasing number of terrorist attacks since Year 2005.
- Besides Middle East, South America, Africa and South Asia are the less known regions which suffer miserably from the terrorist attacks.
- Many western countries have had terrorist attacks for longer durations that were more severe than expected. For instance, France had the most number of terrorist attacks around 1997-98.
- The most common targets of terrorist attacks are Private Citizens and Property, followed by Police and Military.
- Iraq has the most terrorist attacks record at 17284, most of which took place after the Iraq war in 2004, about more than 3 terrorist attacks every day.

## Future Work

### VISUALISATION RECOMMENDATIONS

- Link the Text Cloud to the cross filter.
- Add tooltips to show the terrorism attack details when the mouse hovering on different parts of the map.

### DATASET RECOMMENDATIONS

- The dataset has too many irrelevant words and missing records in the motivation column, which makes analysis of certain aspects difficult.
- Data about clearer attack motivations will be much more helpful in building a text cloud.

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