

Final Project Webpage

<http://www-edlab.cs.umass.edu/~nbodapati/index.html>

The pages can be individually accessed as:

<http://www-edlab.cs.umass.edu/~nbodapati/index.html>

<http://www-edlab.cs.umass.edu/~nbodapati/index1.html>

<http://www-edlab.cs.umass.edu/~nbodapati/index2.html>

<http://www-edlab.cs.umass.edu/~nbodapati/index3.html>

<http://www-edlab.cs.umass.edu/~nbodapati/index4.html>

<http://www-edlab.cs.umass.edu/~nbodapati/index5.html>

The questions I was interested in :

To see how the number of events reported varied across the years, across the countries, cities etc.

To see how the sentiment varied across the years and countries etc.

To see if there is a correlation between the duration of the events, time, shapes, sentiment and so on.

Finally to find if there exists a pattern in the visits or reports.

The questions answered:

All the above are explored and there seems to be no recurring pattern. Only a sharp increase in the number of reports all over. Sentiment is a consistent amazement or wonder at the sighting of an ufo. With rare mentions of fear etc. I have used pie charts, line charts, bar charts, circular heat charts, usa and world datamaps ,parallel coordinates and heat maps with clear description of how to use the buttons, select options on the web page. Most of it is self explanatory.

1)The dataset i chose is UFO report sightings collected and maintained by NUFORC for the last century. The data is both scrubbed and geolocated. It contains around 80 thousand points. I wanted to learn the trends in the ufo sightings and some interesting points on what kind of experiences most people have reported over the years.

The link to dataset:

<https://github.com/planetsig/ufo-reports>.

2)Link to my webpage:

<http://www-edlab.cs.umass.edu/~nbodapati/index.html>

The display works best on a 15.6 inch screen like my laptop. The edlab server elnux1.cs.umass.edu must be running for the visualizations to work.

I have run mongodb and nodejs server in the background. In case something happens and the systems are rebooted, please run the following commands in 2 terminals of elnux1.cs.umass.edu (only elnux1.cs.umass.edu).

On terminal-1:

```
>screen
```

```
>mongodb --dbpath <...path_to_my_account...>/public_html/data/ --port 2417
```

On terminal-2:

```
>screen
```

```
>nodejs <...path_to_my_account...>/public_html/Server.js
```

3)I have used python to remove data samples with missing experiences information. I have used city-state combinations to predict missing state names for cities and missing country names for states. The final count of my data samples is around 72 thousand. I have used gensim's word2vec package to learn word embeddings for the experiences in the dataset. I have run clustering algorithm k-means from the sklearn library and identified the optimal number to be 2 using the inertia plot. The python notebook with the code is shared. I have also collected the top 100 most frequently used words and 5 nearest neighbors to those words from the learnt word embeddings.

For the visualizations to be built, I have mostly used d3.js basic code and some from dc.js. Mongodb handles most of the queries with find,aggregate with match and group ,sorting options.All the code is present in Server.js.

4)Related Work:

<https://vizthis.wordpress.com/2017/02/21/i-want-to-believe-ufo-sightings-around-the-world/>
<http://www.inquisitr.com/3790920/ufo-sightings-daily-increasing-could-data-signal-big-event/>

REferences:

<http://prcweb.co.uk/circularheatchart/>
<https://github.com/syntagmatic/parallel-coordinates>
<http://datamaps.github.io/>

5)Exploration: Much of the work i have done is exploration. I have added sufficient tips on the web page to guide in understanding what the graphs mean and how to select the points on the graphs.

The records have data collected from the year 1910. Usa is the only country to have reports of ufo sightings. Other countries like canada, australia, england started reporting since 1940-50s. There is a sharp spike in the number of reports after 1990 and in the last few years, there are records showing alien visits happening almost every day of the year and with more than one visit per day across the globe. Is this a cause for some panic? Or is it just the growing obsession people have with alien beings as a result of numerous movies and fiction books released on the topic in recent times? Some shapes of the ufos like teardrop, flare,hexagon are barely seen but "strange light" or "light", "triangle" shapes are reported by thousands of people.

The duration of the visits has grown from barely 30mins to over 5hrs per trip. The number of personal experiences shared is less than those shared in an objective tone. Like just reporting a vision of the ufo than something being done to them or they or their family somehow being involved in the event. This i didn't expect because much of the talk(that i have come across) around ufos these days would be how someone has gotten abducted and how brain washed they are as a result etc.

web page: There are 6 pages in all that can be navigated through <Next> and <Previous> buttons.