**Visual Analytics**

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**Paper presented by Team3 (Project 1)**

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**Introduction:**

“Are we all alone in the universe?” Since the Medieval Ages, humans have been thinking about this issue. Although the evidence of extraterrestrial life is far from being fulfilled, the U.S. government has done several projects related to UFO sightings. These include Project Sign (40's), Project Grudge (40's and 50's) and the more famous Blue Book project that was dissolved in 1969. In 2016, the CIA released many UFO-related items and secret documents.

We obtained the data from the National UFO Reporting Center (Federal funded department), and used Tableau to visualize and answer the following questions:

1. Where have the most UFO sightings been around the world?
2. How has the trend of UFO sightings varied over the years?
3. What are people reporting about in their UFO sightings?
4. What are the most common shapes?
5. Does the release of Extraterrestrial Movies influence UFO sightings?

**Description of Data:**

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| --- | --- | --- |
| Description | Metrics | Comments |
| Datetime | Date & Time | Contains date and time of sighting |
| City | String | City in which UFO was sighted |
| State | String | State in which UFO was sighted |
| Country | String | Country of Sighting |
| Shape | String | Shape of the UFO |
| Duration | Seconds | Duration of the Sighting in seconds |
| Duration | Hours/Min | Duration of the sighting in hours and min |
| Comments | String | Sighting description |
| Date posted | Date & Time | Posted date of the sighting |
| Latitude | Number | Latitude coordinate of the sighting |
| Longitude | Number | Longitude coordinate of the sighting |
| Population 12 | Number | Population of each state in the United States in 2012 |
| Population 13 | Number | Population of each state in the United States in 2013 |
| Population 14 | Number | Population of each state in the United States in 2014 |
| Year | Date & Time | Release Year of Extraterrestrial Movies |
| Title | String | Titles of Extraterrestrial Movies |

**Target Audience:** National UFO reporting center scientists and organizations working on extraterrestrial sightings, NASA, common people interested in UFO sightings, journalists/film directors

**Process:** Imported scrubbed data (no missing values) → Imported map image from **Mapbox** → Number of records incorporated in the map (filter: US territory, year / marks: size (number of records), city) → line graphs were used to see yearly, monthly, hourly trend (parameter used for yearly and monthly) and also for duration of UFO sightings → bar graphs were used to compare UFO sightings of major cities and states and also to compare few common UFO shapes reported → using dual axis, we compared the release of movies and reports of UFO sightings from 1998 to 2014 → processed comments’ data in R to populate unigram and bigram data → used processed data to create word-cloud to understand the common words → used action filters on dashboards to filter other worksheets

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| **Business Insights** | |
| 1 | With an increase in the number of UFO sightings, films about extraterrestrial life became highly popular. |
| 2 | NUFORC is now based in Washington state where is not the most UFO sightings were reported. |
| 3 | The UFO sighting happened mostly during the night time when people cannot see the object clearly. The comment made by people who saw UFOs were vague such as slow moving, bright, object moving and so on. The vagueness gives people anxiety or fear according to Beck (2015). |
| 4 | The most common shape of UFO sighting was light which majority of time is missile launches. California had the most UFO sightings among the states. California has Travis air force base where tests missile launches, and these are mistaken as UFOs  Numerous sightings have been observed on July 4th and other holidays, in which fireworks and other celebrations could have been mistaken as sightings. |

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| **Corresponding Recommendations** | |
| 1 | People will be more interested to extraterrestrial related films if the background of the film is shot in cities that actually do have many UFO sightings. |
| 2 | NUFORC, National UFO Reporting Center can be created in other cities or states where UFO sightings were often reported |
| 3 | In United States, over 40,000 people bought alien-abduction insurance. Insurance companies can take advantage of this situation and sell similar insurances in locations where there have been more sightings. |
| 4 | Many people mistook testing missile launches as UFO sightings. The missile launches can be seen as lights on the sky. Those reports can be disregarded or not taken into serious consideration to lessen the overload of UFO sighting reports to NUFORC or NASA.. |

**Challenges faced:**

* Most of the team members did not know how to run text analytics. One of the team member, however, had experience in text analytics, so he explained what text analytic is and went from step by step together with the members of team to be all on the same page
* We had difficulty in incorporating images that we found on internet to tableau. We found a way to incorporate images in tableau by searching on the internet

**Best Practices followed:**

* Same color palette, minimal textual data, dynamic action filters, proper color contrast (background and color), Infographics

Citation

Beck, J. (2016, February 25). The Personality Trait That Fuels Anxiety. Retrieved from https://www.theatlantic.com/health/archive/2015/03/how-uncertainty-fuels-anxiety/388066/