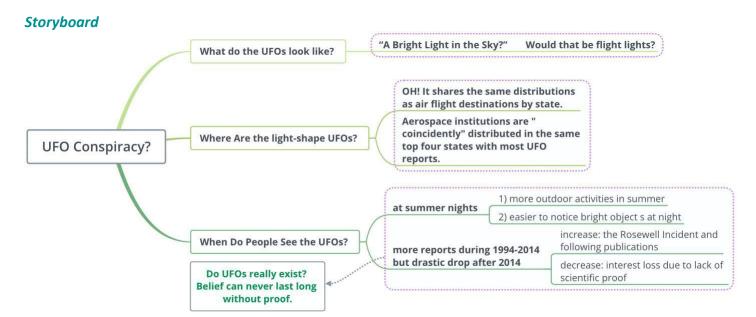
Analysis Brief

- Text analysis: A word cloud & a tree-map were applied to show the frequency distribution for text
 & categorical variables frequently used words in "comments" and the UFO shapes
- **Spatial analysis:** Two map graphs were utilized to compare the distributions of the UFO sightings and the air-flights destinations by state. (The flight destination dataset was left joined in the main UFO report dataset based on the abbreviations of each state.) Aerospace institutions in the top four states were listed in the graph as well.
- *Time series analysis*: Bar charts and line chart were leveraged to show the seasonality (by month and by hours) and time trends (by year) for the reported UFO sightings.



Data sources

- Main dataset from the National UFO Reporting Center: http://www.nuforc.org/webreports.html
- Partial dataset from Kaggle UFO Reports in the united States:
 https://www.kaggle.com/abigaillarion/ufo-reports-in-united-states/data
- Air-flight destination dataset from Flyover States: https://championtraveler.com/news/flyover-states-americans-think-are-boring/
- Joined dataset of list of all 50 state abbreviations: https://abbreviations.yourdictionary.com/articles/state-abbrev.html

References

- Philip J. (September 21, 2018). What is behind the decline in UFO sightings? The Guardian.
 Retrieved November 28, 2018 from https://www.theguardian.com/world/2018/sep/21/what-is-behind-the-decline-in-ufo-sightings
- Wikipedia. Roswell UFO incident. Wikipedia. Retrieved November 28, 2018 from https://en.wikipedia.org/wiki/Roswell UFO incident

Image sources

• UFO icon in the heading banner: https://www.kisspng.com/png-computer-icons-extraterrestrial-life-unidentified-798672/

 Newspaper of the Roswell Incident: https://blurppy.com/2011/07/08/july-8th-1947-the-roswell-incident/

 Aircraft of the Roswell Incident: https://whyevolutionistrue.wordpress.com/2018/07/08/sunday-hili-dialogue-210/

• The "alien" of the Roswell Incident: https://www.mirror.co.uk/news/weird-news/mystery-rock-found-roswell-ufo-10194125

 Logo of the Gulf of Mexico: <u>http://gulfresearchinitiative.org/</u>

 Logo of the U.S. Air Force: https://commons.wikimedia.org/wiki/File:US Air Force Logo Solid Colour.svg

 Logo of NASA: https://en.wikipedia.org/wiki/NASA insignia

 Logo of SpaceX: https://commons.wikimedia.org/wiki/File:SpaceX-Logo.svg

 Logo of Boeing: <u>https://www.boeing.com.au/</u>