



# ATinstagram

Mason Barden

Steve Cho

Nicholas Halstead

Tashi Jeshong and

Zubin Joseph

CS 4624 Multimedia

Hypertext & Information Access

Edward Fox

Virginia Tech , Blacksburg VA 24061

May 9, 2022



# Outline

- Main Goal/Deliverables
- Timeline
- Project Results
  - Sentiment Analysis
  - Geo Locations
  - Visualizations
- Lessons Learned/Future Plans
- Acknowledgements
- References



# Main Goal/Deliverables

- Visualization(s) of analysis on Leave No Trace (LNT) related posts
- Quantitative analysis of distribution of hashtags

## THE 7 PRINCIPLES of Leave No Trace

---

1. Plan Ahead & Prepare
  2. Travel & Camp on Durable Surfaces
  3. Dispose of Waste Properly
  4. Leave What You Find
  5. Minimize Campfire Impacts
  6. Respect Wildlife
  7. Be Considerate of Other Visitors
- 





# Timeline

## January

- **Initiated data scraping and cleaning**
- **Gathered requirements from sponsors**

## February

- **Completed data scraping and cleaning**
- **~120k posts collected**

## March

- **Collected geo-locations of posts**
- **Started working on sentiment analysis**

## April

- **Completed sentiment analysis**
- **Created visualizations based off collected data**

# Sentiment Analysis Format (1)

Given sentence:: This guy is extremely smart and handsome, but not funny.

Words in lexicon list and their valence scores are:

smart: 1.7

handsome: 2.2

funny: 1.9

<Words with ALL CAPS will have their intensity increased by adjusting their scalar>

Negation words used:

not

<These negation words are considered when calculating valence scores>

Booster words used:

extremely

<These booster words are considered when calculating overall sentiment score>

Counting all exclamation points and question marks...

The total value of intensity scale applied from emphasis amplifiers:

0.000

Input sentence

Words in the lexicon list and their valence scores

Negation words

Booster words

Exclamation points/Question marks

# Sentiment Analysis Format (2)

Each word in the sentence score with necessary scalar and intensity applied:  
The booster and negation words are not considered for valence scores.

```
This: 0.000  
guy: 0.000  
is: 0.000  
extremely: 0.000  
smart: 0.996  
and: 0.000  
handsome: 1.232  
but: 0.000  
not: 0.000  
funny: -2.109
```

Sentiment scores of each word

Normalizing the total score...

Computing positive, negative, and neutral scores...

```
neg score was: 0.217  
neu score was: 0.488 1.  
pos score was: 0.295  
compound score was: 0.031 2.
```

1. Positive, negative, and neutral scores

2. Total score

The sentence overall had neutral sentiment with compounding score 0.031

=====

# Sentiment Analysis Results

	<b>#Int OR #leavenotrace</b>	<b>#Int OR #leavenotrace AND #leavenothingbutfootprints</b>
Positive Posts	27016	691
Slightly Positive Posts	6503	137
Neutral Posts	14209	411
Slightly Negative Posts	1719	53
Negative Posts	1386	68



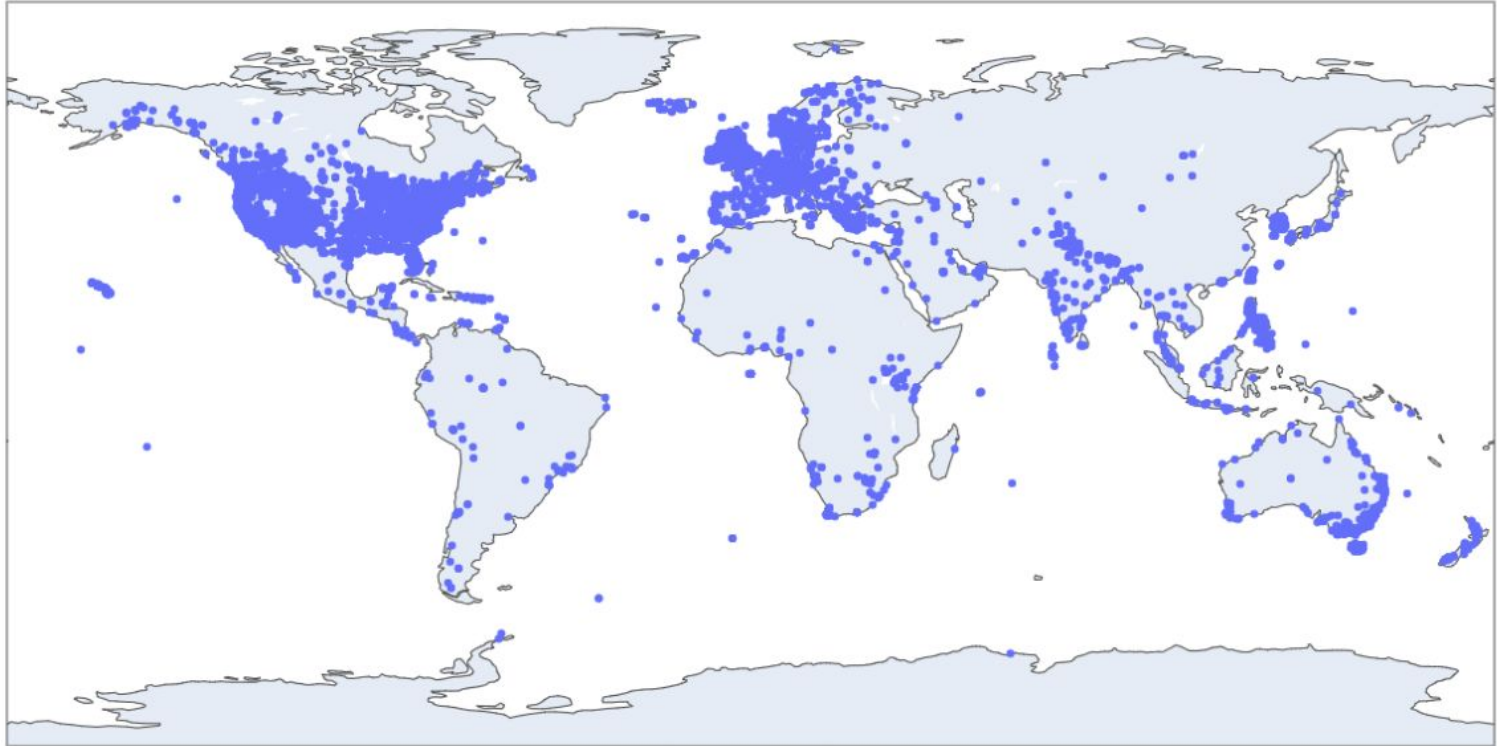
# Sentiment Analysis Results

	#atsobo2021	#atnobo2021	#atclassof2021	#appalachiantrail
Positive Posts	48	73	89	796
Slightly Positive Posts	15	15	24	163
Neutral Posts	35	185	43	594
Slightly Negative Posts	8	1	3	63
Negative Posts	6	6	2	45



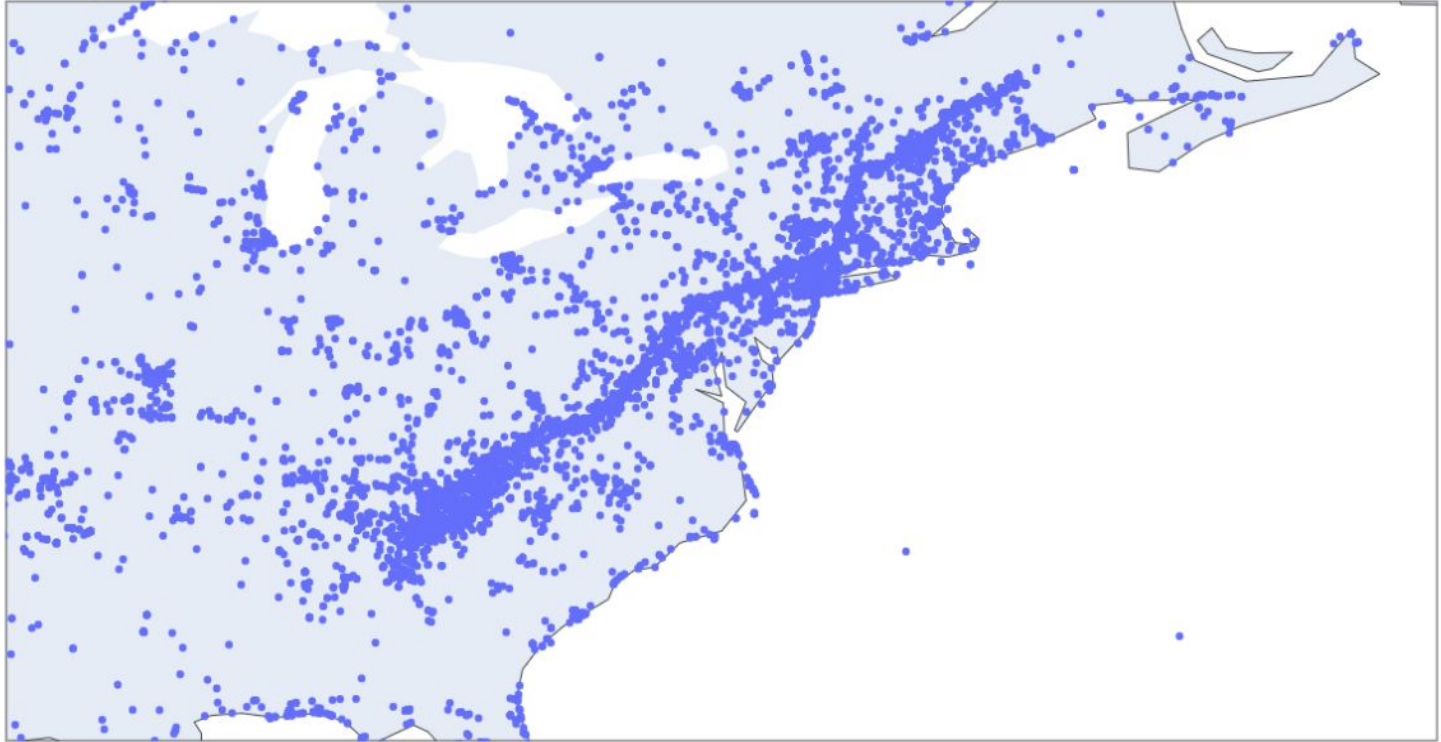
# Geo-Location of Posts

World map



# Zoomed in on Appalachian Trail

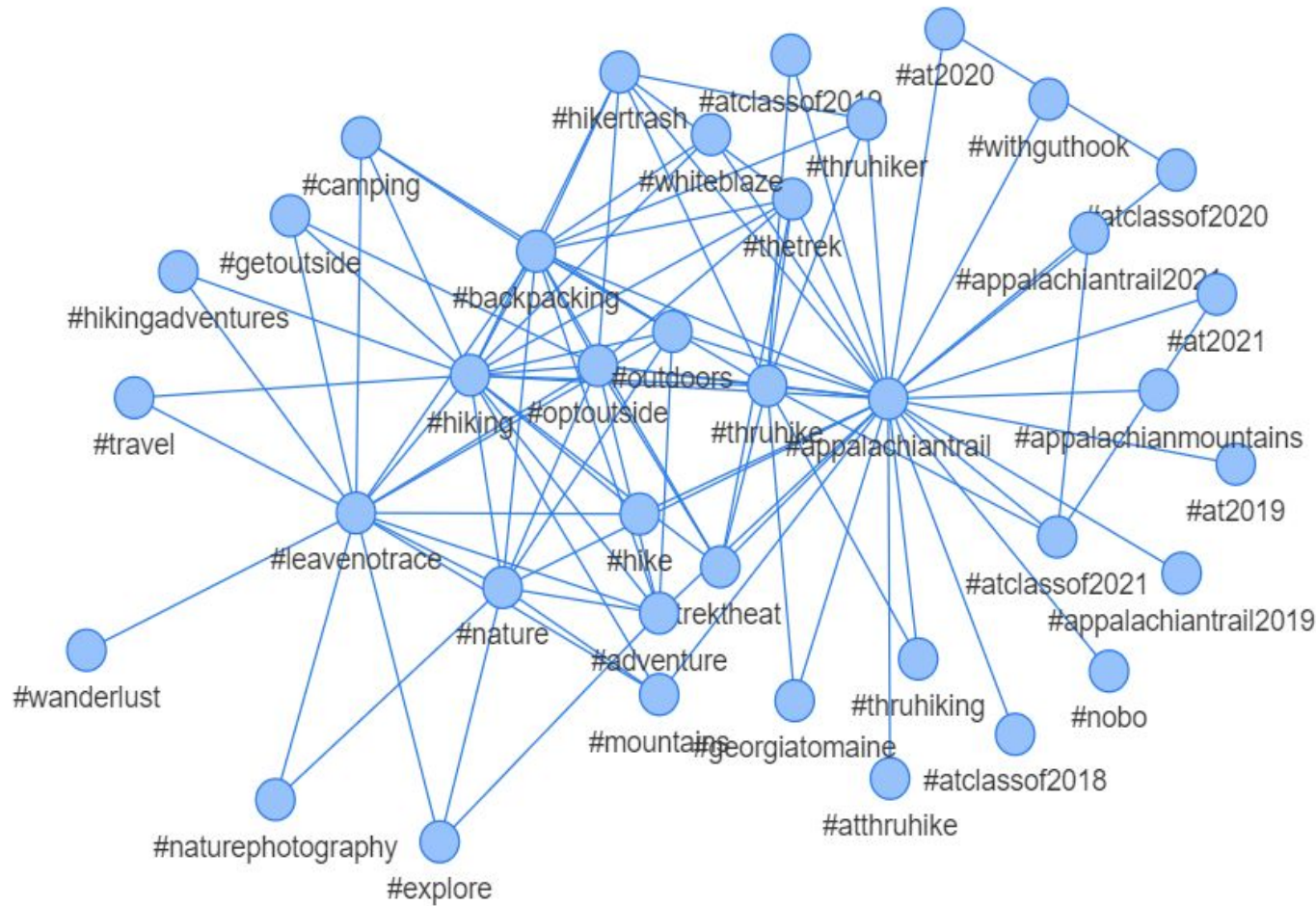
World map





# Visualization Results

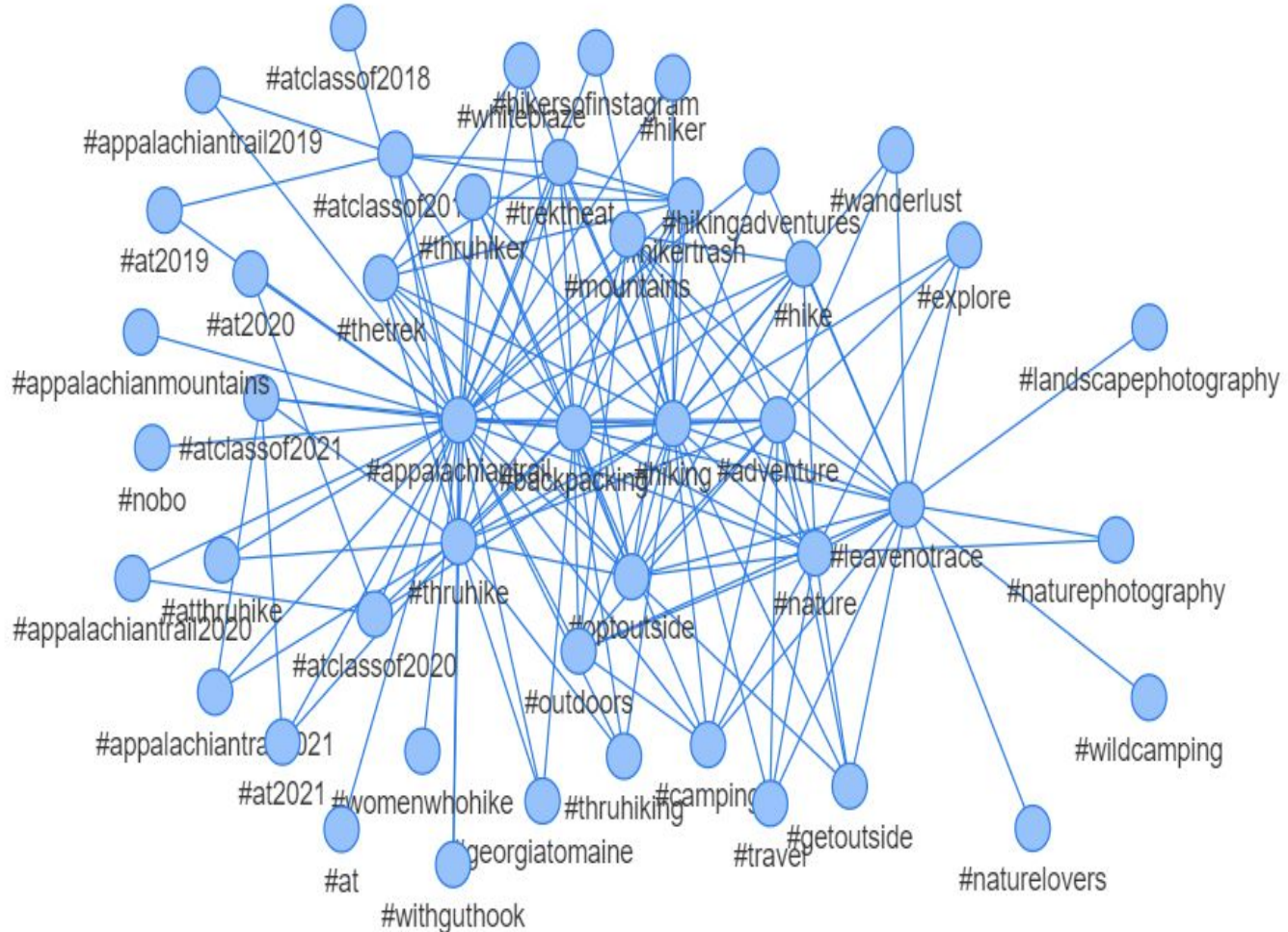
Top 100 most frequently occurring tag combinations from all of the data collected.





# Visualization Results (2)

Top 150 most frequently occurring tag combinations from all of the data collected.





# Lessons Learned

- Maintaining time management skills and communication
- Planning
- Add time for debugging
- Comment code for future users



# Future Plans

- Use something other than Selenium to scrape Instagram data
- Use a different sentiment analysis technique and compare results



# Acknowledgements

## CLIENTS

### Primary Contact:

- Computer Science Ph.D. student Morva Saaty,  
[morvasaaty@vt.edu](mailto:morvasaaty@vt.edu)

### Other Project Members:

- Computer Science Professor, Scott McCrickard
- School of Urban & International Affairs, Kris Wernstedt
- School of Urban & International Affairs, Shalini Misra
- USGS & Department of Forest Resources, Jeff Marion