


Humans of New York

Topic Modeling of Instagram Posts

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Social Media Analytics
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Motivation

Our project explored the ‘Humans of New York’ Instagram account and its relationship between topics presented and interaction from fans.

Data Description

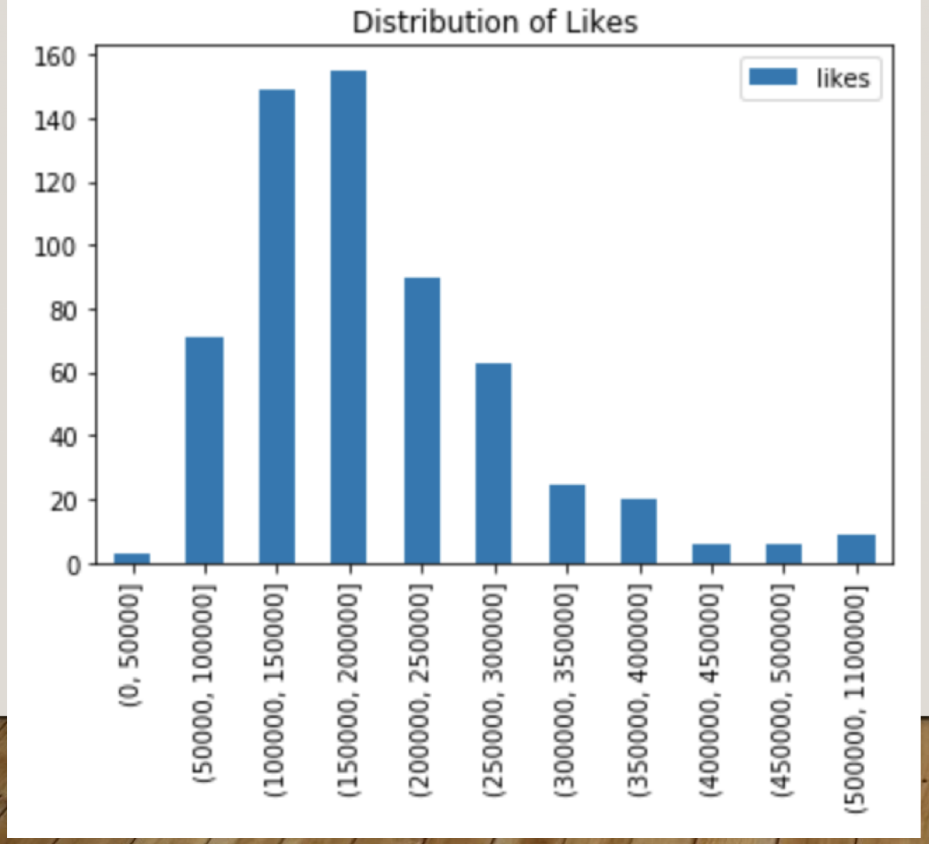
We used the Instagram_Vision.py to scrape 598 unique images posted by Humans of New York within the last two years.

From the output, we extracted:

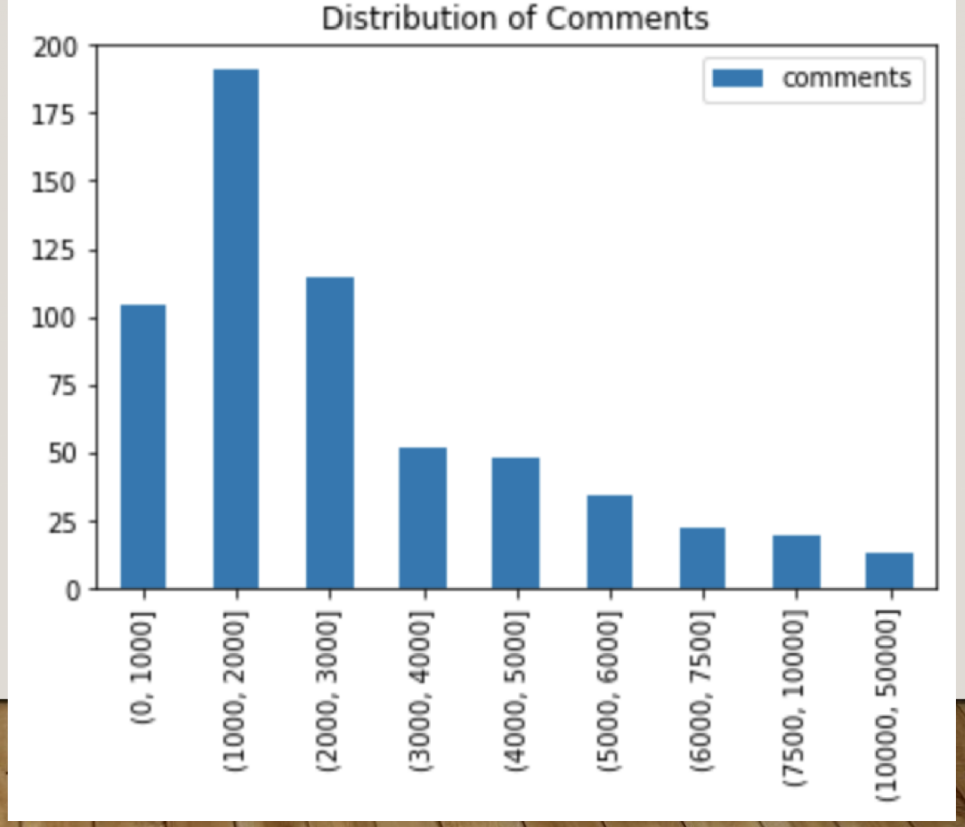
- Number of likes
- Number of comments
- Post location
- “Story” words to use in topic modeling
- Google image labels to use in topic modeling

Variance of Likes and Comments

Mean of Likes = 195492
Median of Likes = 177000
Standard Deviation of Likes = 102398



Mean of Comments = 2923
Median of Comments = 2016
Standard Deviation of Comments = 3256



Geographic Locations

Top Locations:

1. NYC
2. Mumbai
3. Jaipur
4. São Paolo
5. Rio de Janeiro

Topic Modeling from “Stories”

Topic 0: Pet care

Topic 1: Daily routine

Topic 2: Health

Topic 3: Separation anxiety

Topic 4: Business travel

Topic 5: Milestones

Topic 6: Mourning

Topic 7: Fathers/kids

Topic 8: Jobs

Topic 9: Mom/kids

Topic 10: Mothers/school

Topic 11: Struggle

Topic 12: Love/family/parents

Topic 13: Sons/bravery

Topic 14: Marriage

Analysis of Topics from “Stories”

Likes Regression

Likes = 186408.8 + 5854.9*T0 + (-13525.9)*T1 + (-22933.6)*T2 + 11551.4*T3 + 11670.6*T4 + (-19903.5)*T5 + 7751.8*T6 + 12748.5*T7 + (-10224.8)*T8 + 26662.4*T9 + 32074.5*T10 + (-12265.3)*T11 + 27366.3*T12 + 2406.2*T13 + 10248.4*T14

- RMSE = 99,353.4

Comments Regression

Comments = 3062.2 + 596.3 *T0 + (-1223.7)*T1 + (-210.3)*T2 + 220.2*T3 + (-562.9)*T4 + (-756.6)*T5 + (-647.5)*T6 + 448.8*T7 + (-482.9)*T8 + 85.6*T9 + 201.6*T10 + (-469.7)*T11 + 150.6*T12 + 1650.5*T13 + 381.0*T14

- RMSE = 3,186.2

Topic Modeling from Google Cloud Vision Image Labels

Topic 0: Black Tie

Topic 1: Traffic

Topic 2: Food + Drink

Topic 3: Dogs

Topic 4: Eyewear

Topic 5: Outdoors

Topic 6: Beach

Topic 7: Transportation

Topic 8: Technology

Topic 9: Elderly

Topic 10: Marketplace

Topic 11: Fashion

Topic 12: Socializing

Topic 13: Business

Topic 14: Happiness

Analysis of Topics from Google Cloud Vision image labels

Likes Regression

Likes = 206235.8 + 70010.4*T0 + (-10029.6) *T1 + 17458.9*T2 + 44863.7 *T3 + (-3534.6)*T4 + (-14569.9)*T5 + (-23271.3) *T6 + (-29999.1)*T7 + (-68204.5)*T8 + (-7530.9)*T9 + (-5435.6)*T10 + 14356.5*T11 + (-23949.6)*T12 + (-22760.4)*T13 + 30276.3*T14

- RMSE = 97,787.0

Comments Regression

Comments = 3277.8 + (-284.5)*T0 + (-502.7)*T1 + (-1044.1)*T2 + 1919.2*T3 + (-520.6)*T4 + (-424.8)*T5 + 767.8*T6 + 181.9*T7 + (-1217.6)*T8 + (-54.1)*T9 + (-836.3)*T10 + 891.8*T11 + 579.0*T12 + (-131.0)*T13 + (-99.9)*T14

- RMSE = 3,186.7

Next Steps

- **Scrape all remaining posts**
- **Unexplored factors that might influence the model:**
  - Change in followers over time
  - Day of week/time of day posted
  - Length of the caption
  - Location of post
  - Current events that influence the public's emotional reaction
- **Possible changes to the target variable:**
  - Regress on a combination of likes and comments together
  - Filter out meaningless comments (e.g. "@barua" - tagging a friend)