Instant Visualization of Twitter Data

Team Dahlia:
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Our Objectives

- Visualize the massive amount of twitter data (tweets) in a timely fashion
- Ideal for fast information extraction
- Reproducible in Python
- To be utilized by a variety of industries and technical/non-technical professionals
- Especially suitable for **professionals with no programming skills!**

Twitter Dashboard: Why Bother?

- **Graphics VS. Table**
- **Lack of Visualization Tools for Non-Tech**
  - **Unable to handle large dataset**
  - **Require some knowledge about coding**

- ✓ **Most straightforward, convenient way for non-tech specialists**

Dataset: Twitter API Data

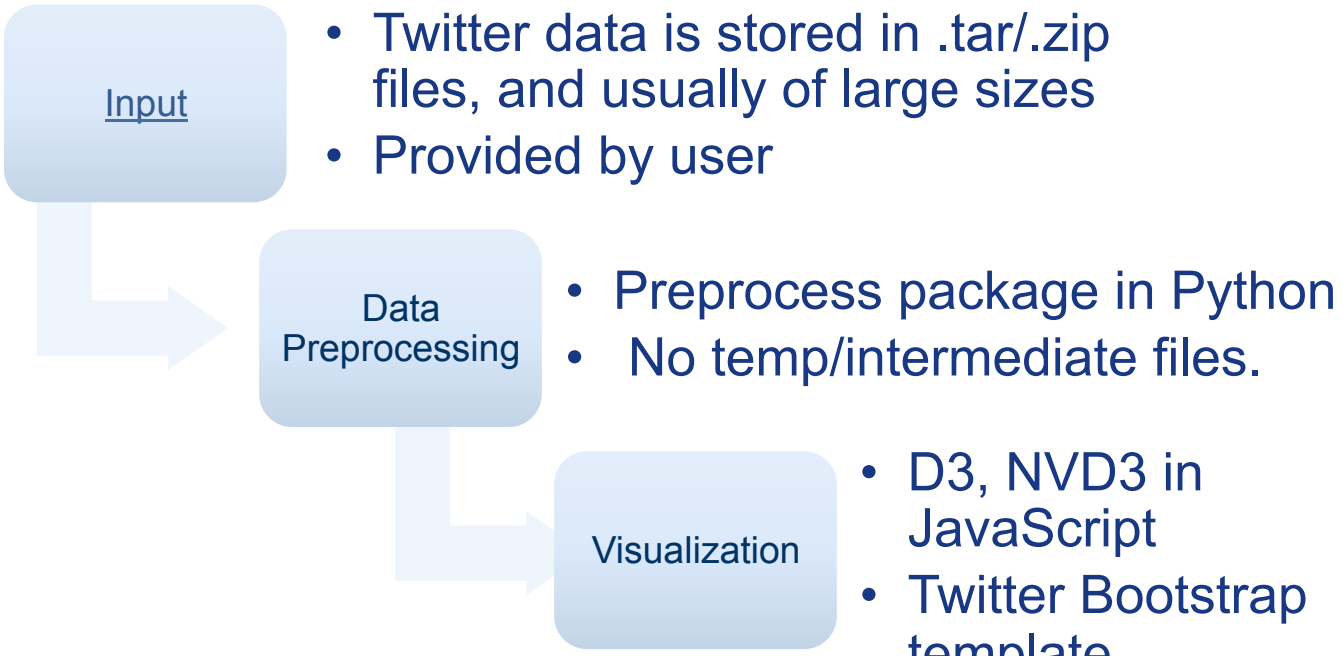
- **2 datasets (Provided by Pablo)**
  - **Hillary's Presidential Announcement 892.7 MB**
  - **2014 Oscar 749.8 MB**

	Hillary.tar	Oscar.tar
# tweets	1592531	1440256
Hashtags	42889	62230
Geolocations	570	754
User mention	98484	172775
Sources	4164	2044
Unique Tweets	84863	137742
Words	110843	129648
Unique Users	687919	960104

Dataset: Twitter API Data

- **Future Data Acquisition:**
  - **User should acquire data before utilizing Dahlia:**
    - **Existing app for Twitter API query: DMI-TCAT**
    - **Computationally expensive**
- **Data Processing:**
  - **Field selection and writing files in python VS MapReduce**
  - **Running Time: ~10 min for 1 Gb**

Pipeline: How do we get there?



Methodology: Visualization

- **Overview:** Pie Charts and Stacked Area Charts
- **Tweet Content:**
  - Table of popular tweets
  - Word Sequence
- **Keywords:** Word Cloud
- **Trends Animation:** Show Reel
- **Interaction:**
  - **Fields:** Dashboard on location and hashtag
  - **User:** Hierarchical Bundling Graph

Product: How does it work?

- Dahlia
  - Proc
    - proc.py
    - main.py
    - deploy.sh
    - ./Proc_d3
  - Vis
    - ./bower_components
    - ./css
    - ./data
    - ./js
    - Index.html
  - run.sh

Preliminary process, utility functions

Automated install

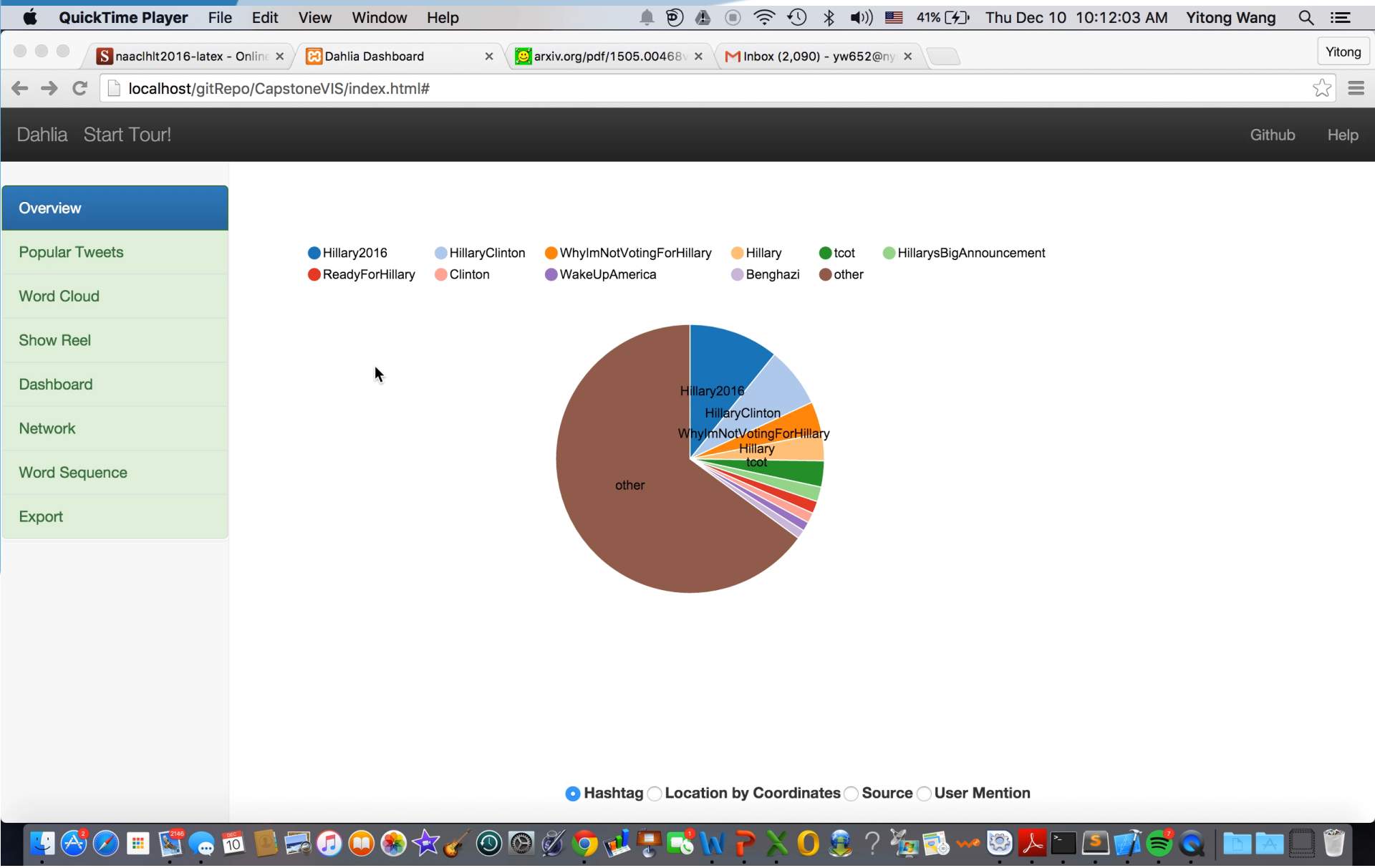
Process for visualization, output goes to Vis/data

Data directly used for visualization

Visualization result in html

Trigger data processing

Hillary-Demo



Oscars-Demo

Chrome File Edit View History Bookmarks People Window Help 53% Thu Dec 10 10:26:41 AM Yitong Wang

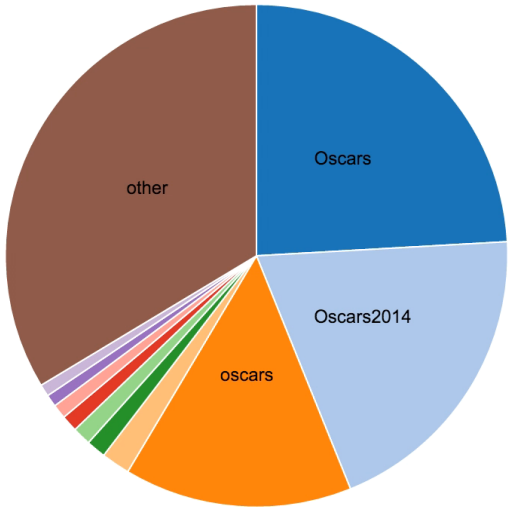
naaclhlt2016-latex - Onlin | Dahlia Dashboard | arxiv.org/pdf/1505.00468 | Inbox (2,090) - yw652@ny | Yitong

localhost/gitRepo/CapstoneVIS/index_o.html#

Dahlia Start Tour! Github Help

- Overview
- Popular Tweets
- Word Cloud
- Show Reel
- Dashboard
- Network
- Word Sequence
- Export

Oscars Oscars2014 oscars Oscar OscarsForVenezuela SOSVenezuela ERedCarpet Gravity Blessed oscars2014 other



Hashtag Location by Coordinates Source User Mention

Product: Getting Started

- Easy Installation:
  - Automated install for Mac OS X
  - Will test on other systems in the future
- Easy to Use:
  - Go to yours web server directory
  - **./run.sh** in command line

Future Work

- Data Acquisition: Connection with Twitter API
- Refine Captured Data: search queries, exclusions, date range, etc.)
- More User Interaction

Acknowledgement

- **Pablo Barberá**
- New York University

- **Claudio T. Silva**
- New York University

- **Bowen Yu**
- Ph.D. Candidate in Computer Science,
- Computer Science and Engineering Department,
- New York University Tandon School of Engineering

Thank You

- **Our Wiki**: https://github.com/NYU-CDS-Capstone-Project/dahlia/wiki
- **Our Demo:**
- http://dahliallc.github.io/#

External resources

- **D3js.org** https://d3js.org
- **D3-cloud** https://github.com/jasondavies/d3-cloud
- **D3-slider** http://thematicmapping.org/playground/d3/d3.slider/
- **jsPDF** https://github.com/MrRio/jsPDF
- **Introjs-D3** https://github.com/anmolkoul/introjs-D3
- **Twitter bootstrap** http://getbootstrap.com
- **NVD3** http://nvd3.org/