Mapping Amman

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Introduction

Prof. Anderson of BU history department is conducting an ethnography of present-day **Amman, Jordan**. In just the last two decades, Amman has doubled in size, and schooling, jobs and entertainment have been privatized. Using the intersection of social media and mapping, we want to answer these questions:

- **Where** do people spend their time?
- **Are people happy** when they are in these places?

Technique Selection

- **Programming Language:** Python 3.7
- **Database:** MongoDB
- **APIs:**
  1. Twitter APIs
  2. Google Cloud Translation API
- **Algorithms & Methods:**
  1. Relational Model
  2. K-means ++
  3. Sentimental Analysis
- **Library:** Folium

Our Work

1. **Data Processing**
   - Scrape Data
     Get 29,000+ tweets near Amman of a seven-day period.
   - Data Transformation
     Selection and Aggregation.
2. **Data Analysis**
   - Filter Geo Information
   - Cluster by K-means++(Figure 1)
   - Text Translation
   - Sentimental Analysis(Figure 2)

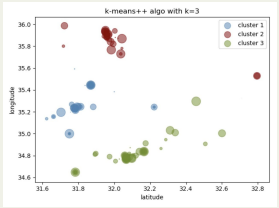


Figure 1

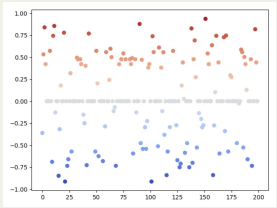
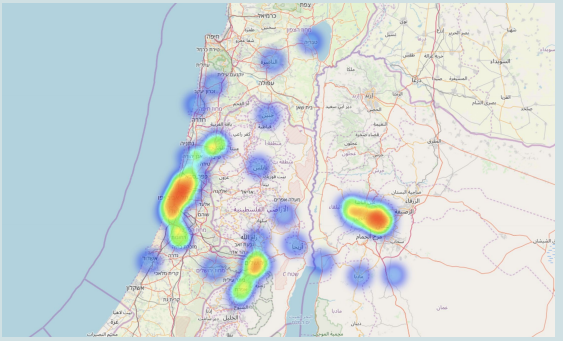


Figure 2

3. **Data Visualization**
   - Map analysis results into OpenStreetMap(OSM)
   - Create an interactive web-based visualization
4. **Future Work**
   - Use Twitter premium APIs to get more data from Amman.

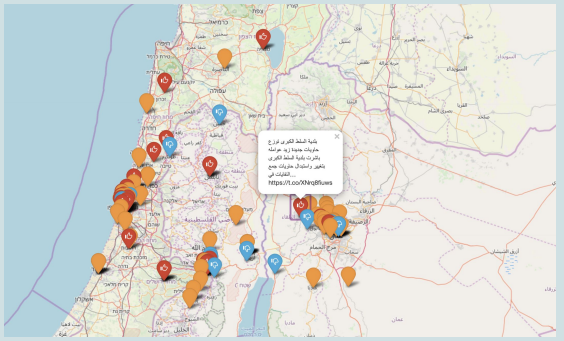
Result

- **Heat Map**



The heat map could represent the **popularity** of places.

- **Sentimental Analysis**



Sentiment of each tweet:
Red Marker with 'thumbs-up': Positive
Blue Marker with 'thumbs-down': Negative
Orange Marker: Neutral
The **text of each tweet** could be viewed by **clicking** the marker.

Github: https://github.com/feiyue33/course-2019-spr-proj

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