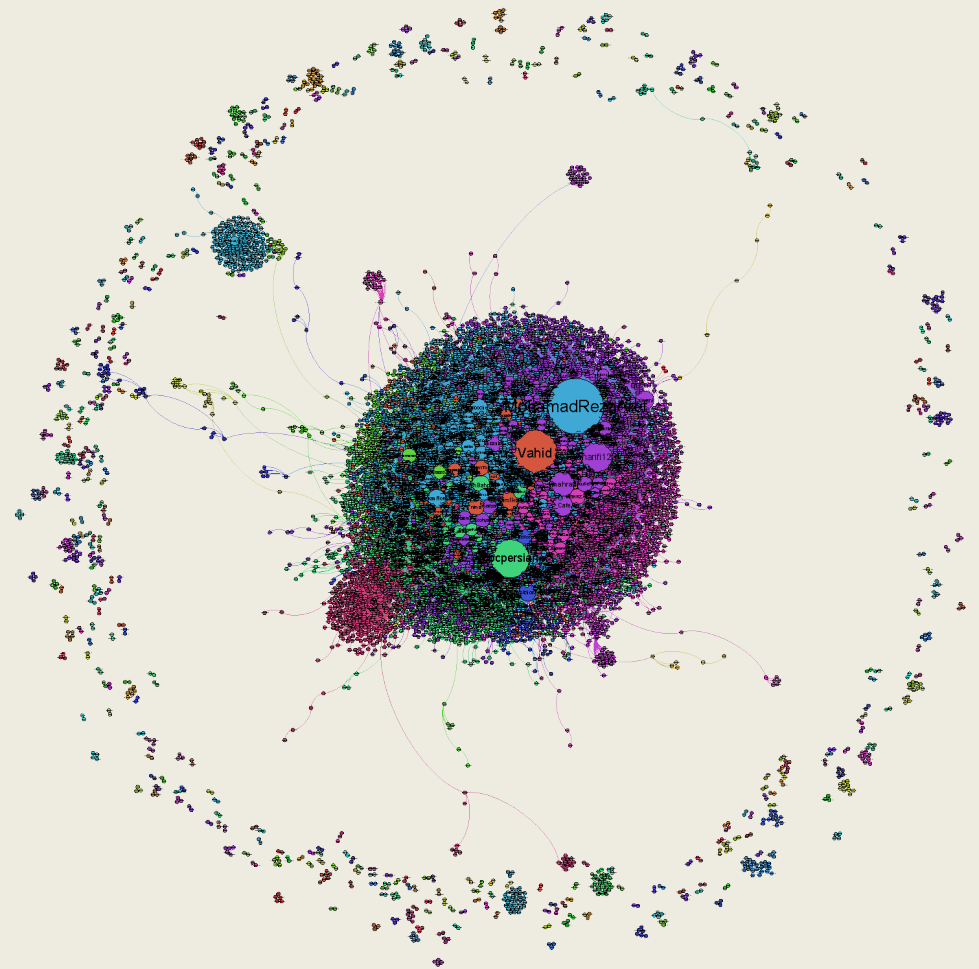


Persian Twitter: A Transforming Social Media Landscape

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School of Information, Kent State University



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Outline

- Background
- Why Cartography?
- Comparing Persian Twitterverse between two elections 2013, 2017
 - _ Analysis of Information Diffusion Networks
 - _ Mapping Political Landscape
- Conclusion and future work



June 2009: Tehran

Photo Credits: Shaun Curry /AFP/Getty Images



June 15, 2009: Freedom Square, Tehran

Photo Credits: AP Photo / Ben Curtis

Background: Twitter Revolution?



(John Cole, Jun 19, 2009, *The Atlantic*)

The Washington Times

EDITORIAL: Iran's Twitter revolution
By - The Washington Times - Tuesday,
June 16, 2009



Background: Twitter Revolution?

NEW YORK TIMES BESTSELLER

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afterword

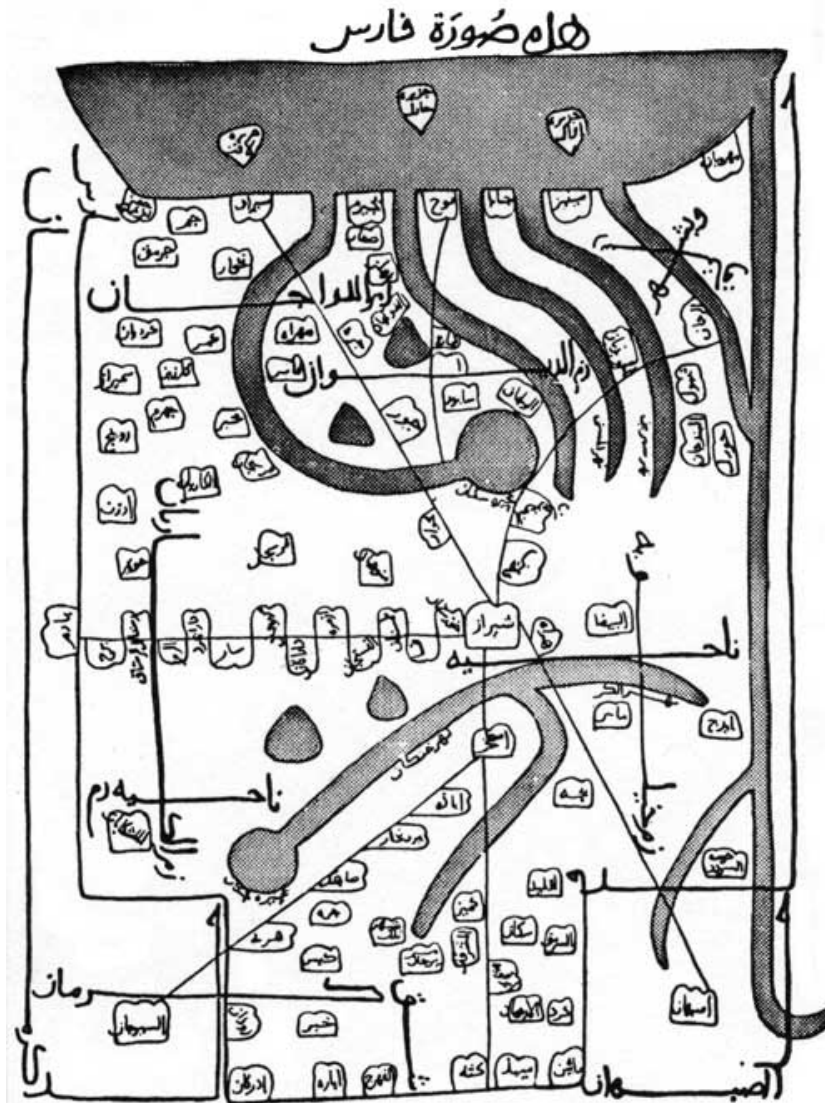
Cover art by JEFF KOONS

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THE NEW
DIGITAL AGE

RESHAPING THE FUTURE
OF PEOPLE, NATIONS
AND BUSINESS

Cartography



Cartography



Evolving repertoires: Digital media use in contentious politics

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2016, Vol. 1(1) 39–55
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ctp.sagepub.com



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Abstract

The spread of the Internet coupled with knowledgeable users has led to the use of digital media as a tool for advocacy and activism. Building on theoretical foundations of eventful histories and digital formations, this article investigates the interrelated nature of contentious politics and digital technologies. Our analysis documents the eventful history of changing digital repertoires of contention in the context of messaging, blogging, and social networking sites in Iran. We argue that investigating single moments of protest offers only snapshots of how digital technologies are used in contentious politics, and entails the risk of focusing on a single platform rather than the mosaic of online and offline repertoires. We demonstrate that documenting event histories challenges the assumptions of the emancipatory nature of a specific technology by revealing the changing efficacy of repertoires during different moments of contention; therefore, we should avoid assigning stable causal relations between digital technologies and the democratization processes of societies.

Keywords

Collective action, contentious politics, digital formation, digital repertoires, eventful history

Introduction

During the 2000s, the Iranian blogosphere developed as a national and international platform for vibrant discussion and political dissent. “Blogestan,” as it is often called, emerged as a leading platform for contentious politics. Although this communicative space has declined in recent years, blogging is one of several platforms for challenging state power over information in Iran. For example, Blogestan offered a primary platform for contentious issues

such as feminism in Iran and discussions have dispersed and grown on other platforms such as Facebook (Faris & Rahimi, 2015; Novak & Khazraee,

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How to do that?

- A systematic program of study
 - Systematic data collection
 - Developing an understanding of context
- Developing tools and establishing methods for computational social science (digital humanities)

Goals

- Theoretical goals
 - Mapping Iran’s online public
 - Improve our understanding of political landscape of social media in Iran beyond the “Twitter Revolution”!!!
 - Fill the empirical gap
 - Repressive culture and restrictions
 - New technological developments
- Methodological goals
 - Developing computational tools to achieve above goals considering the scale of data
 - Find best methods for understanding different issues

Iran's Twitter REvolution

Twitter in Iran

- It is not the most important platform
- Mostly used by younger and savvy demographics
- A good presence of elite (now)
- It is a good case to understand the impact of policy shifts in Iran
- Comparing Persian Twitter in 2013 & 2017

Objectives of the Case Study

- Understanding the information dissemination processes and power structure
 - Using social network analysis
- Understanding the political landscape
 - Using machine learning
- Develop tools to work on Persian text

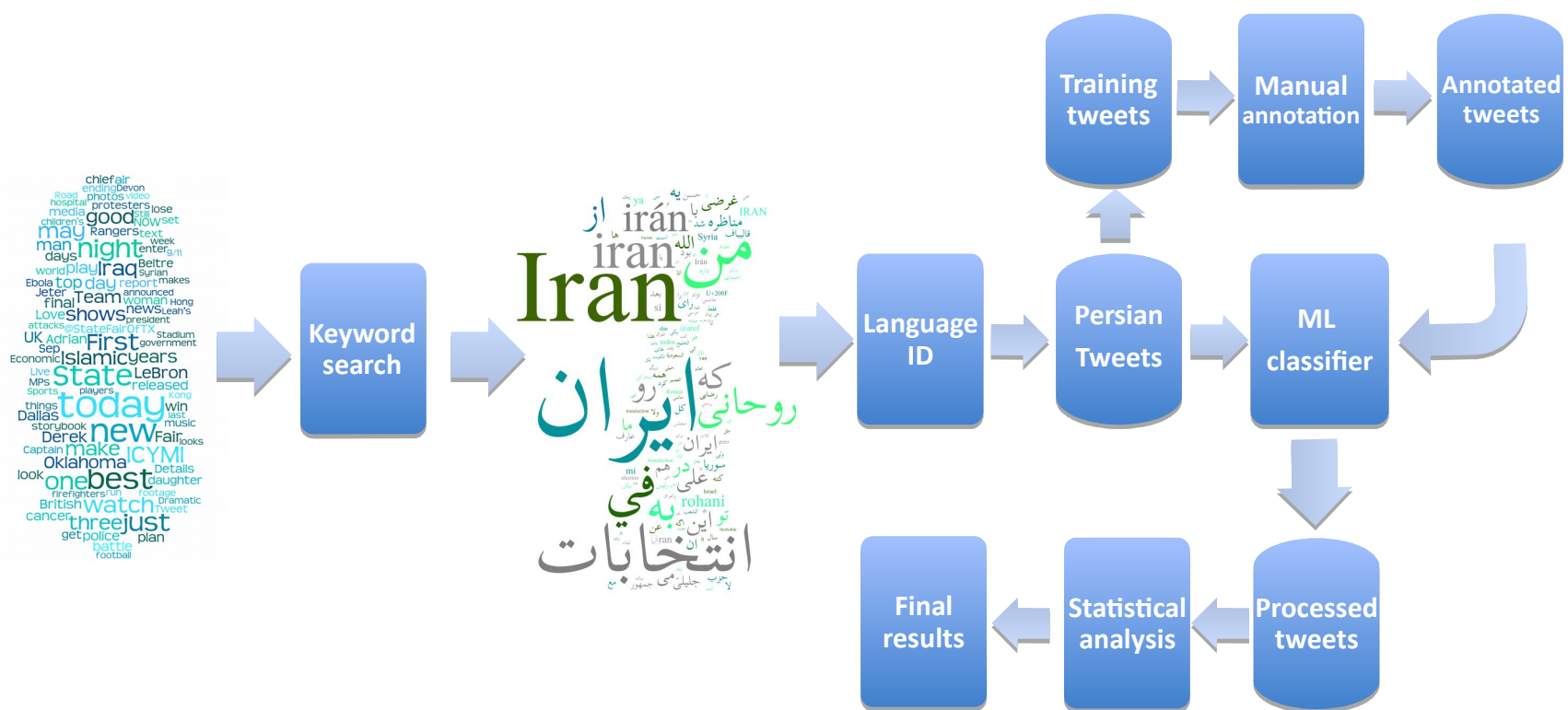
2013 Case

- Data Collection
 - Using Twitter REST API
 - Total 47 keywords and hashtags
 - Data set cover tweets between May 14 and June 29 (Six weeks)
- Result
 - 3 Million Tweets (460K Persian tweets)
 - Studied Persian and English Networks

2017 Case

- Data Collection
 - Using Twitter Streaming API
 - Total 94 keywords and hashtags
 - Data set cover tweets between May 1 and May 25
- Result
 - 2.23 Million Tweets in Persian
 - 6 fold growth in comparison to the same period in 2103 (350K in 25 days)
 - Twitter global growth: 1.5 times

Overview of Machine Learning



Classifier Training and Data Processing

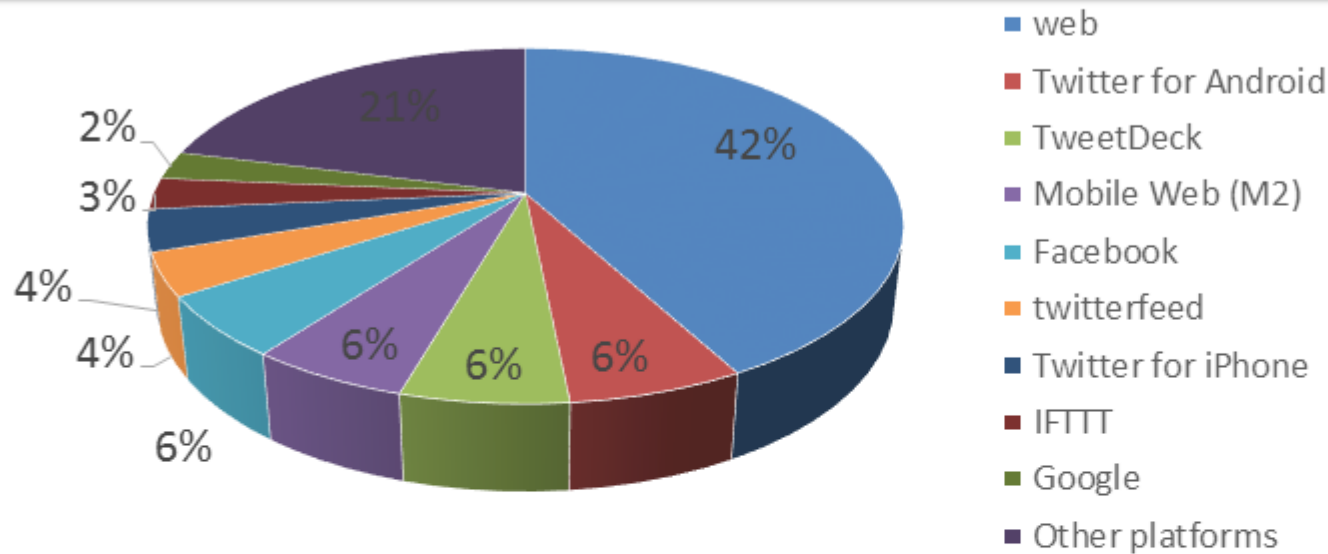
- 2013 Workflow
- Language ID
 - La-strings trained to recognize
- Classifier training
 - Stanford Classifiers
- Data processing workflow
 - Language identifier used to identify the language of each tweet
 - Identify subject and candidate(s) of Persian tweets
 - If the subject is politics and there is at least one candidate, detect sarcasm, sentiment, election participation, and political orientation
- 2017 Workflow (WIP)
- Language ID
 - Twitter Lang ID
 - fastText Lang ID
- Classifier training
 - fastText
- Data processing workflow
 - Language identifier used to identify the unknown tweets
 - Identify tweets with candidate(s) names
 - Detect sentiment towards the name entity

Basic Stats

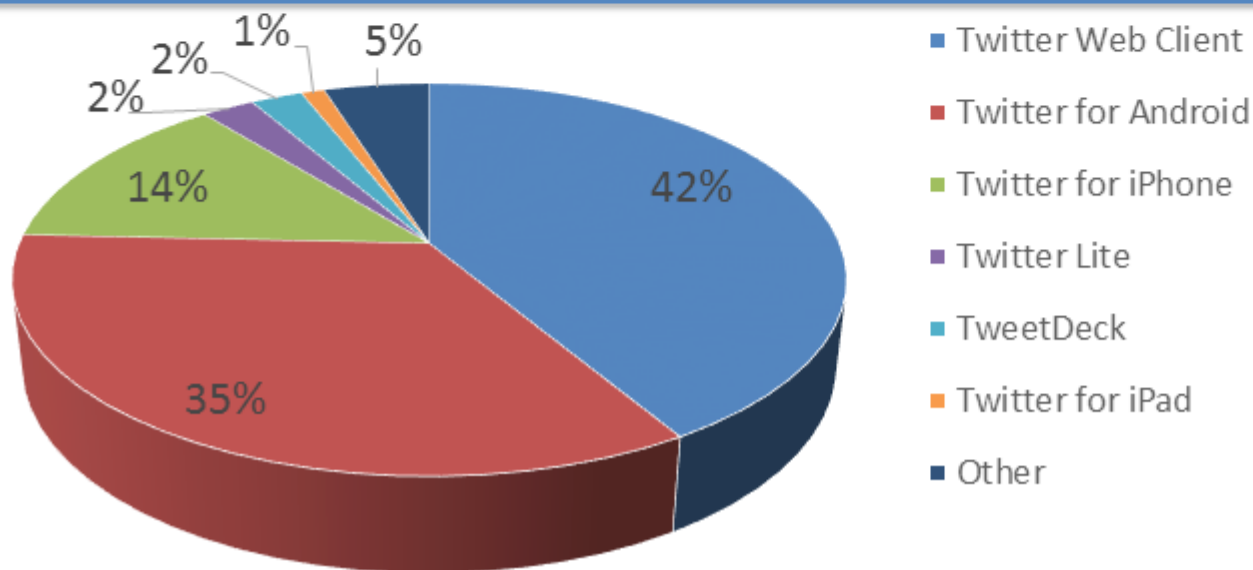
	2013*	2017	Growth
Total Number of Tweets	351,223	2,236,023	537%
Number of Tweets with Links	81,846	1,083,730	1224%
Number of Retweets	81,554	1,240,670	1421%
Unique Users	17,236	80,395	366%

* Similar 25-day period

Most used platforms for Tweets

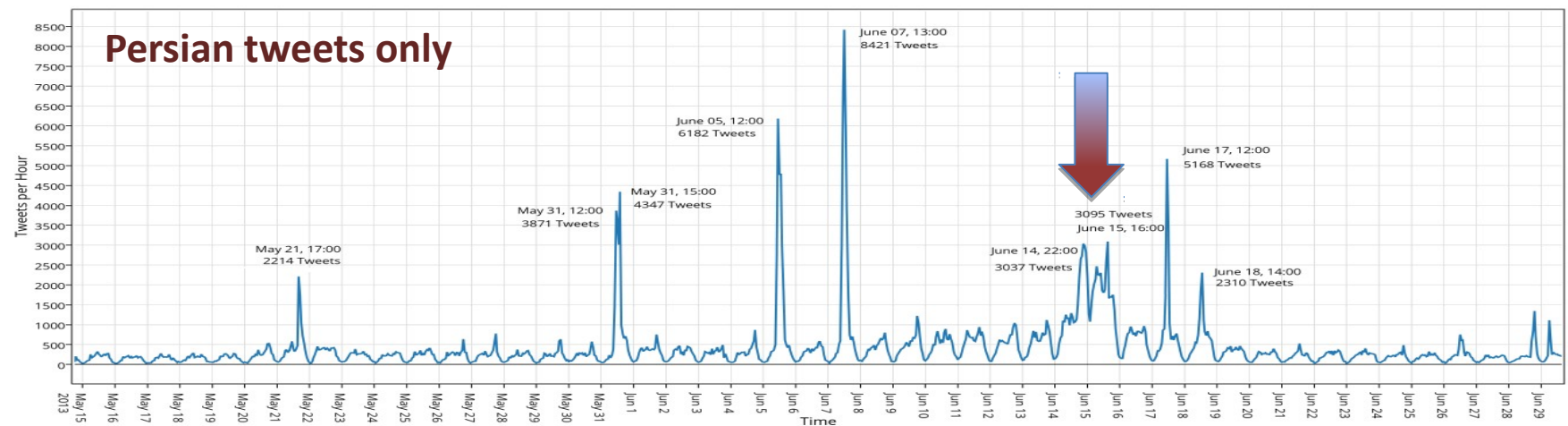
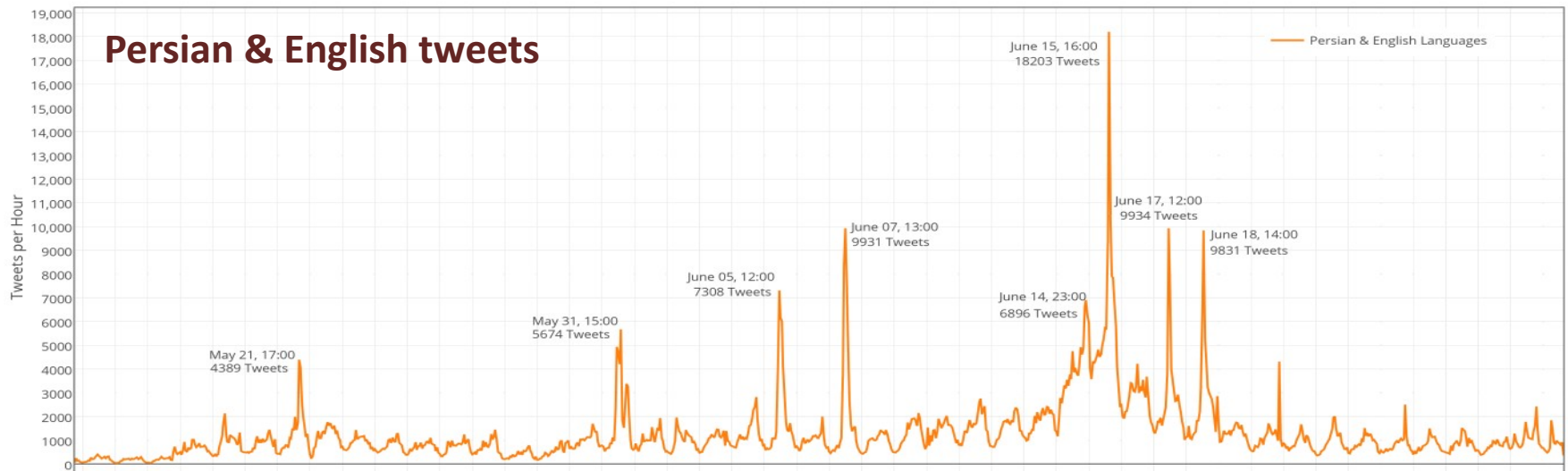


Platforms used for tweets 2013

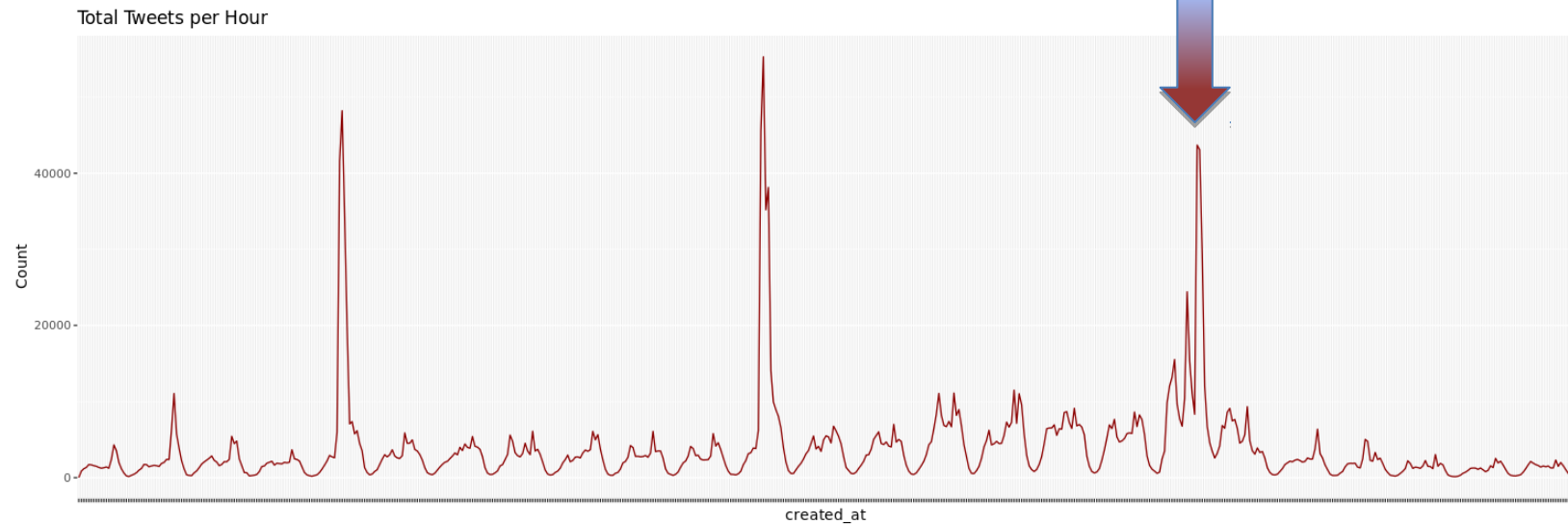
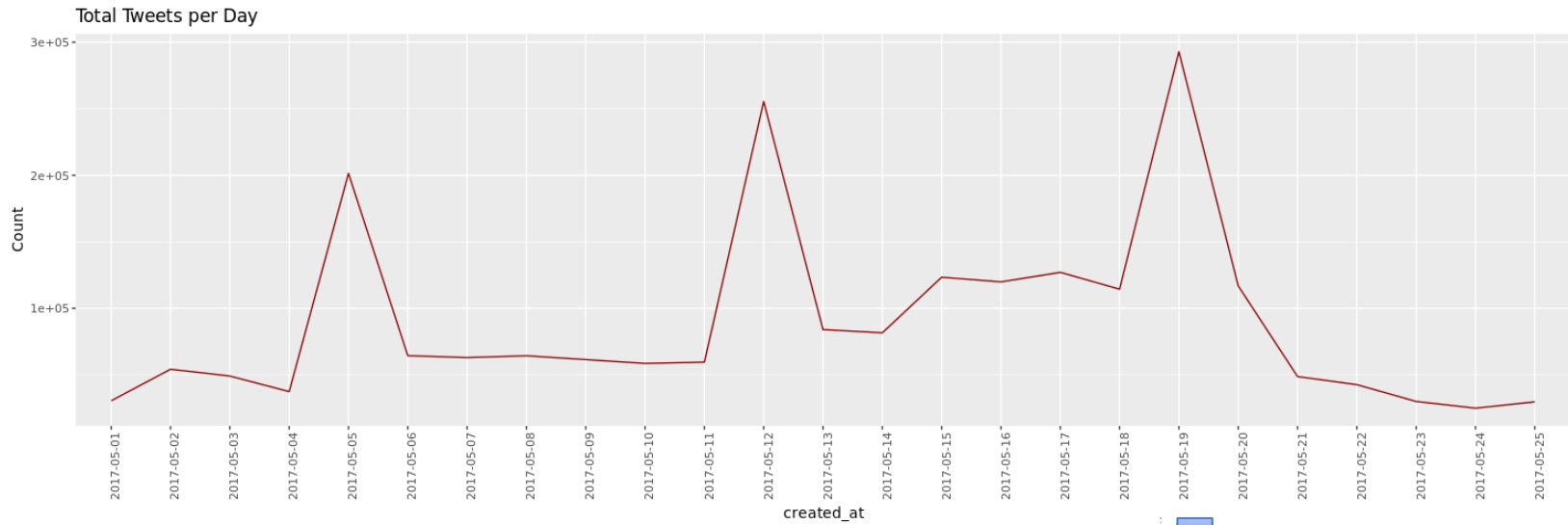


Platforms used for tweets 2017

Distribution of Tweets 2013



Distribution of Tweets 2017



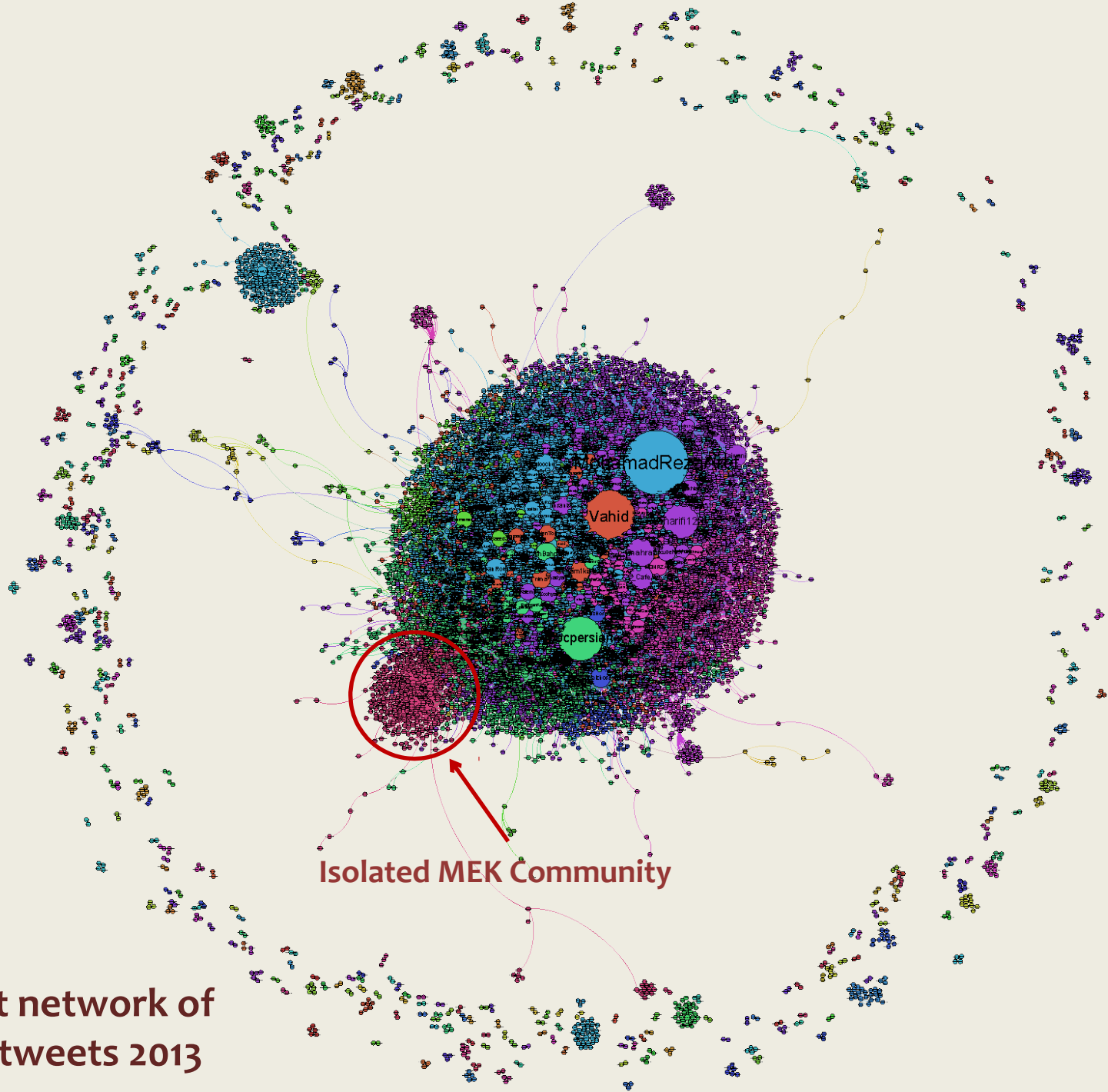
Information Diffusion

- We studied retweet network
- Identified the most influential (Network Centrality) and classified them
- Community detection

Classifying Most Influential Users

We classified the 100 most influential users (most retweeted and PageRank/eigenvector centrality) in four main categories:

- **Official news/media outlets:** (e.g. @cnnbrk:breaking news from CNN)
- **Journalists:** (e.g. @Gesfandiari: Radio Free Europe)
- **Politicians:** official twitter accounts of politicians
- **Social media (Twitter) celebrities:** Popular users who tweet from inside or outside Iran e.g., famous Iranian bloggers



Isolated MEK Community

Retweet network of
Persian tweets 2013

raminkarimi1988
NiMaa62

Reformist Community

MEK Community

Maryam Rajavi_P

EvandHQ

election96

Rouhani_ir

Eshag jahangiri
SharghDaily

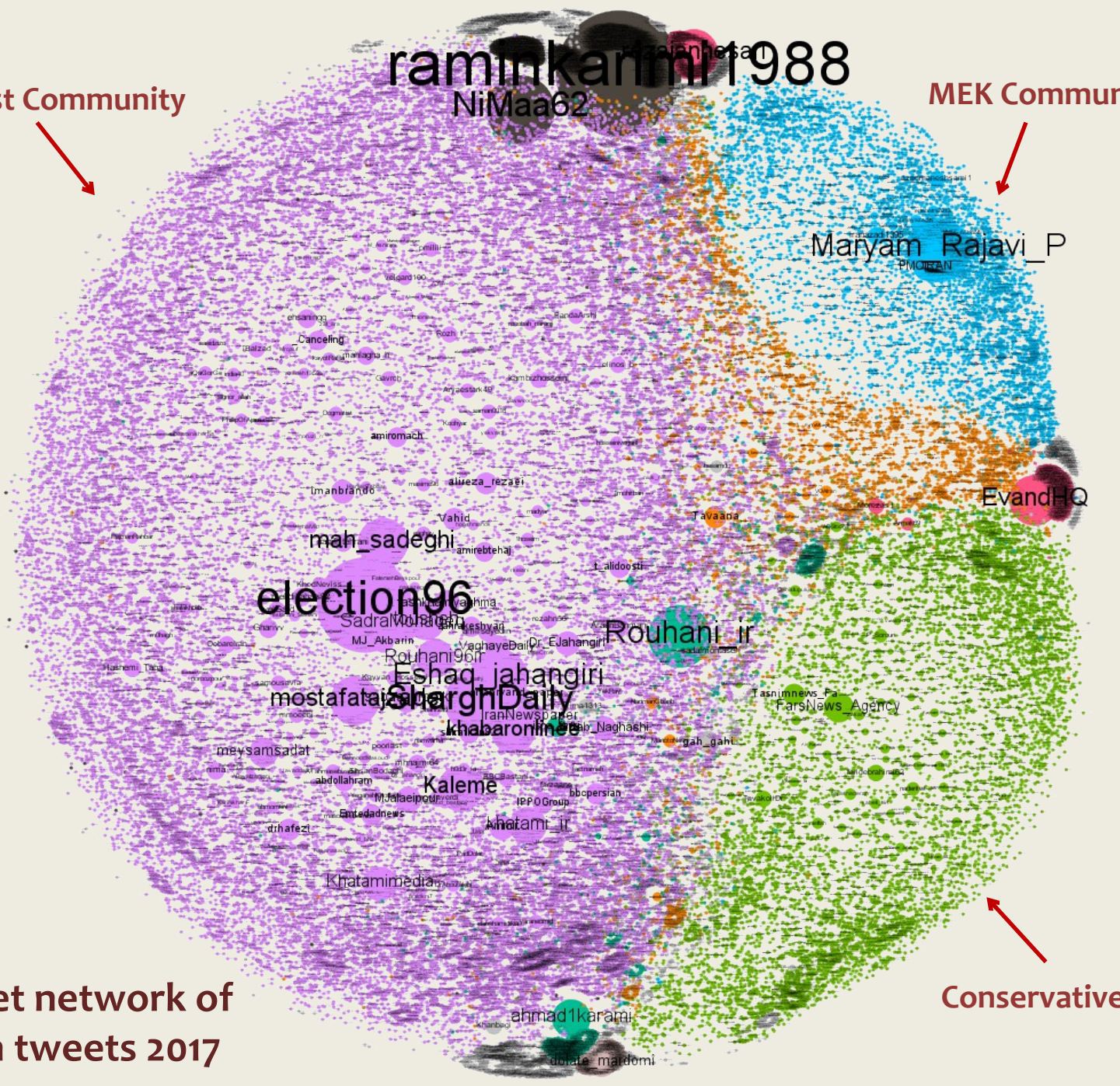
khaboronline

Kaleme

Khatamimedia

Retweet network of
Persian tweets 2017

Conservative Community



Transformation of Power Structure



raminkarimi1988
NiMaa62

Reformist Community

MEK Community

Maryam Rajavi_P

EvandHQ

election96

Rouhani_ir

Eshag jahangiri

SharghDaily

khaboronline

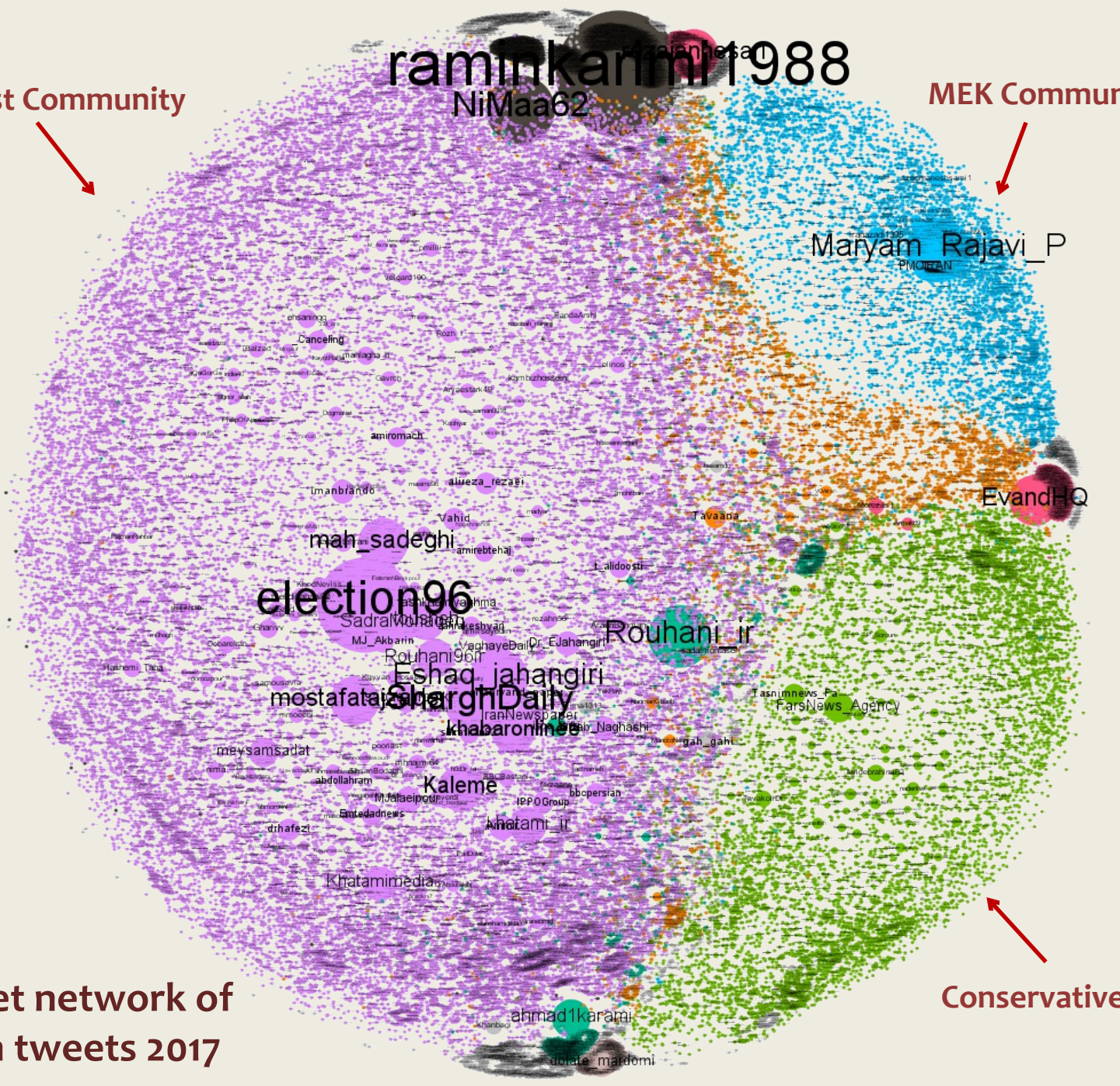
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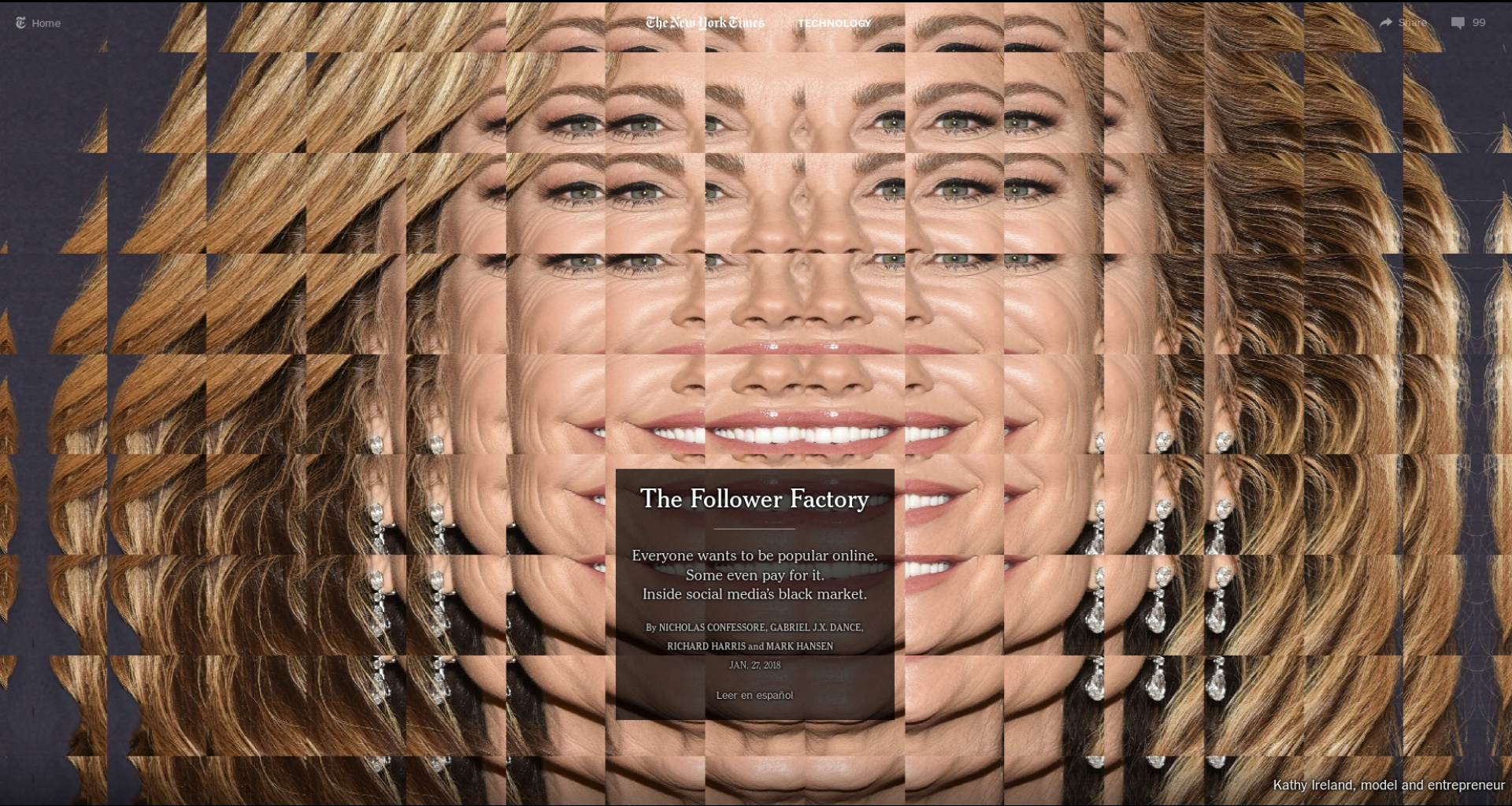
Khatamimedia

ahmad1karani

Conservative Community

Retweet network of Persian tweets 2017





The Follower Factory

Everyone wants to be popular online.
Some even pay for it.
Inside social media's black market.

By NICHOLAS CONFESSORE, GABRIEL J.X. DANCE,
RICHARD HARRIS and MARK HANSEN

JAN. 27, 2018

[Leer en español](#)

Kathy Ireland, model and entrepreneur



Tweets **461** Following **993** Followers **3,983** Likes **28**

Follow

ahmad karami

@ahmad1karami

Joined May 2017

Photos and videos



Tweets Tweets & replies Media

ahmad karami Retweeted



خبرگزاری ایسنا @isna_farsi · 22 May 2017

انتقاد شدید ایران از مواضع مداخله‌جویانه، مخرب و تنش‌زای آمریکا



انتقاد شدید ایران از مواضع مداخله‌جویانه، مخرب و تنش‌زای آمریکا

سخنگوی وزارت امور خارجه کشورمان در واکنش به ادعاهای تکراری و مداخله‌جویانه رئیس‌جمهور آمریکا در عربستان، این مواضع را مداخله‌جویانه، تکراری و مملو از ادعاهای بی پایه علیه کشورمان ع...

isna.ir

New to Twitter?

Sign up now to get your own personalized timeline!

Sign up

Worldwide trends

Donovan Mitchell

74.2K Tweets

#PaisDoCarnaval

13.6K Tweets

#شي_تتميز_فيه_عزّه

23.8K Tweets

Devin Booker

42.2K Tweets

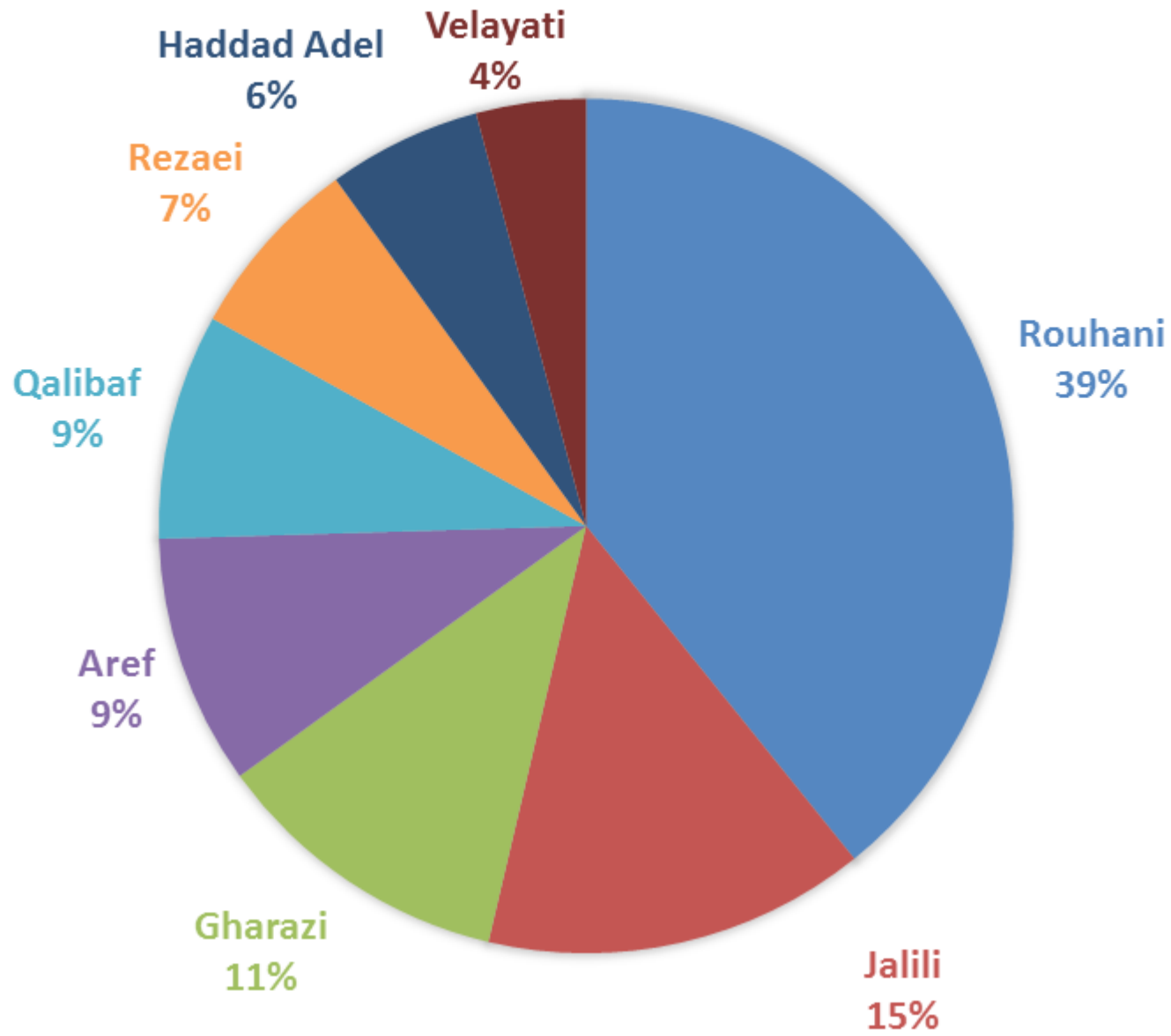
Larry Nance

63.9K Tweets

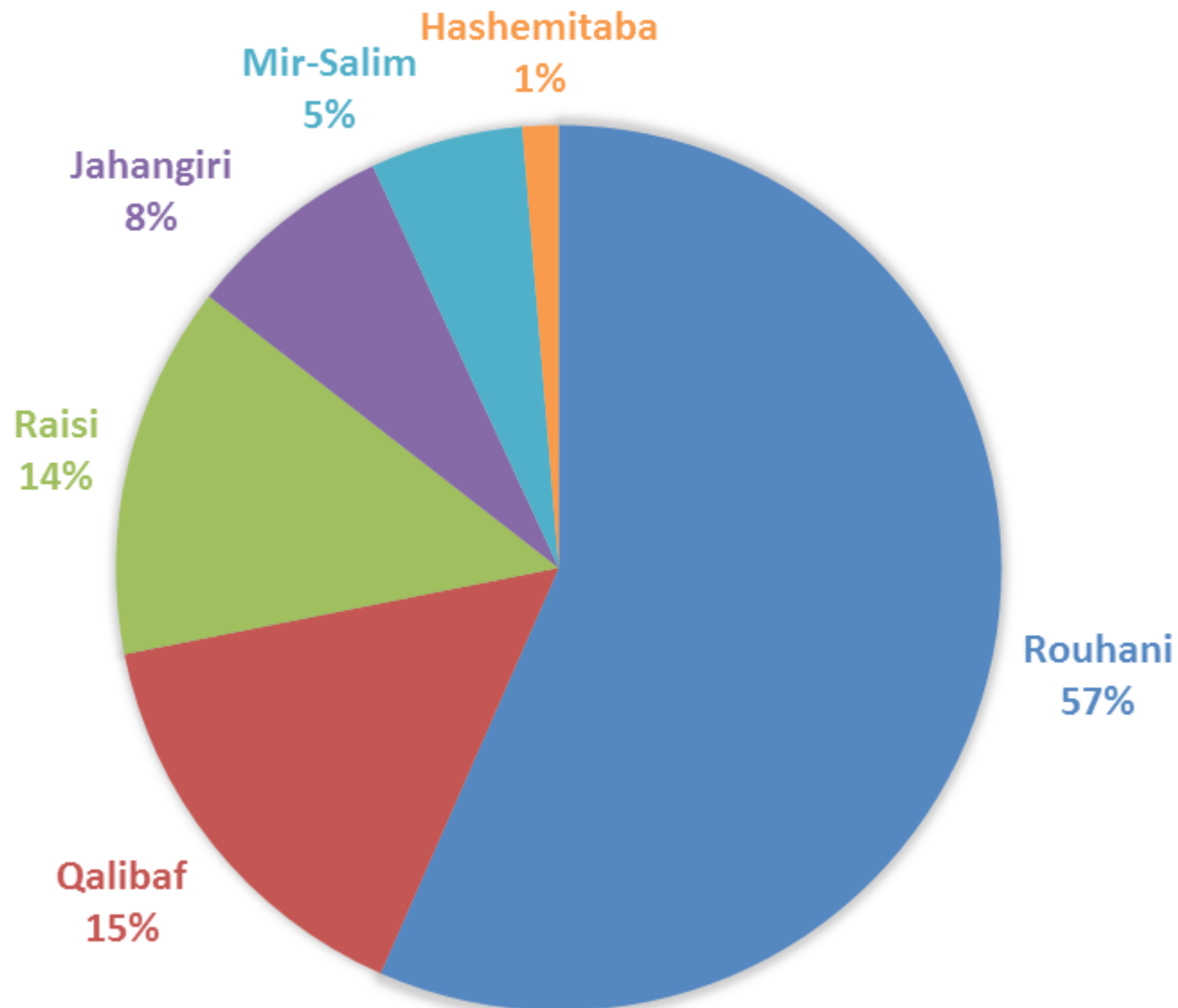
#احيك_يا_هنادي

7,541 Tweets

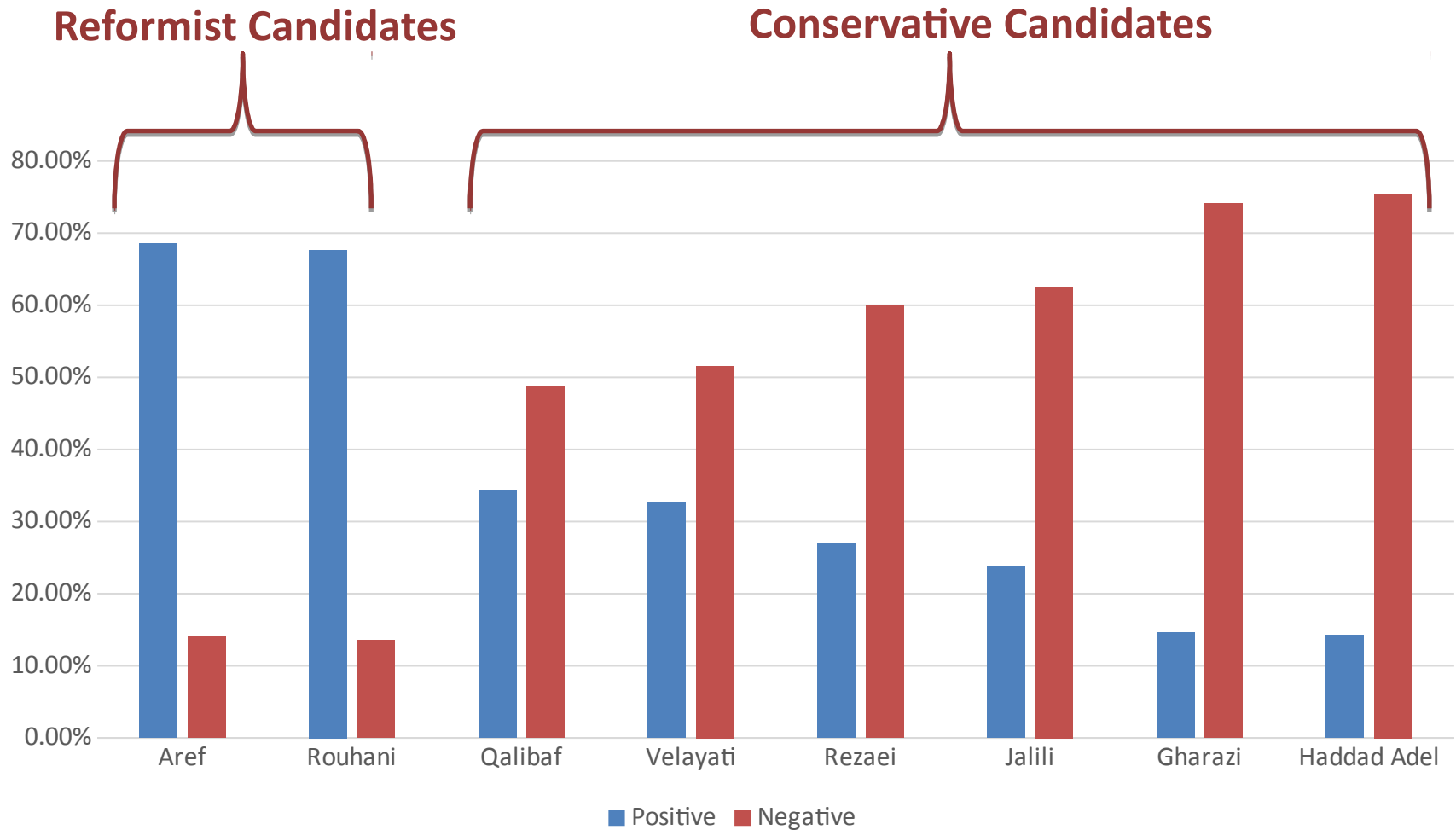
Sentiment analysis: Distribution 2013



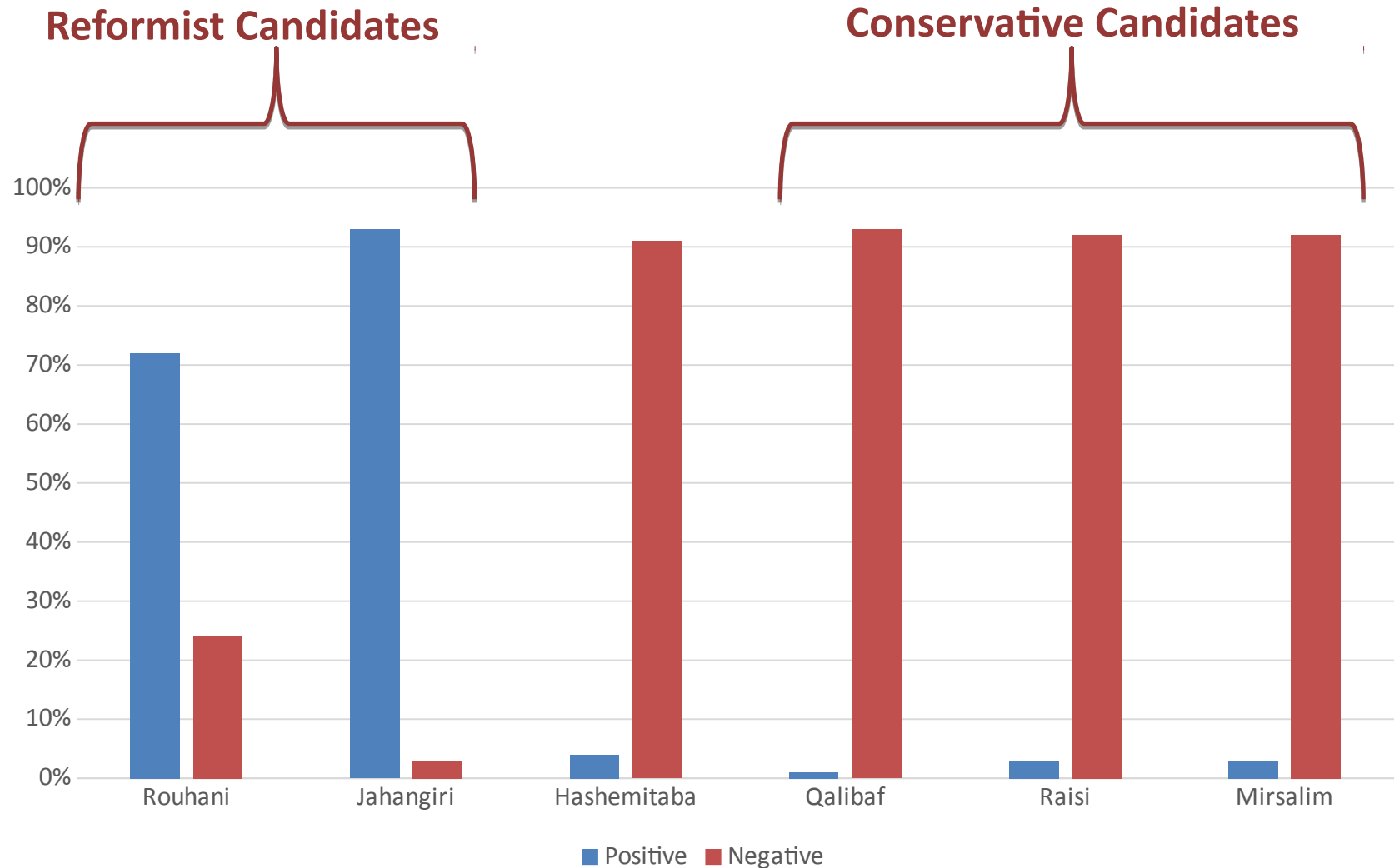
Sentiment analysis: Distribution 2017



Positive and Negative Sentiments



Positive and Negative Sentiments



Demo

Topical Distance Calculation: Jensen-Shannon

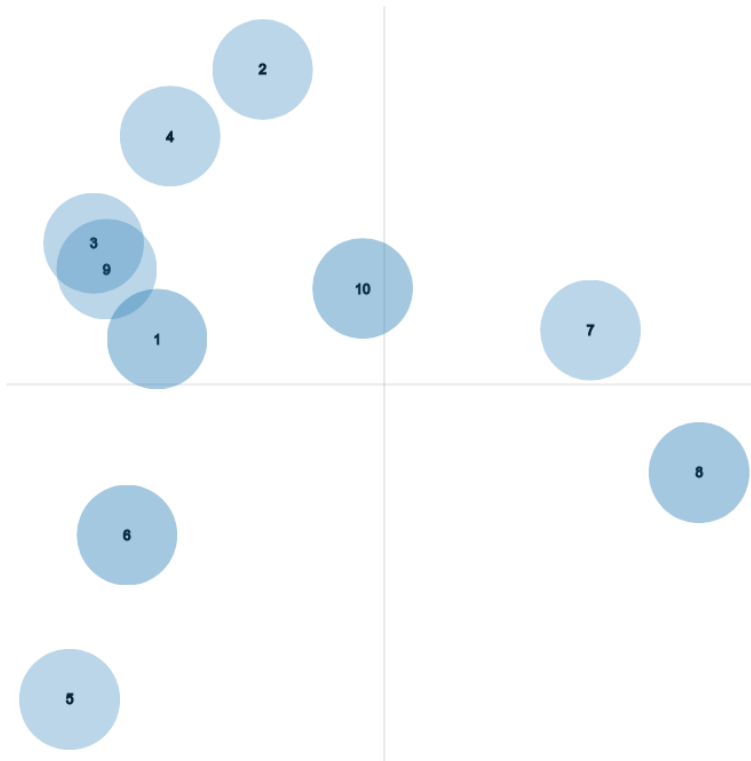
Multidimensional Scaling Method: Classical (PCA)

Number of clusters: 1

Number of terms: 30

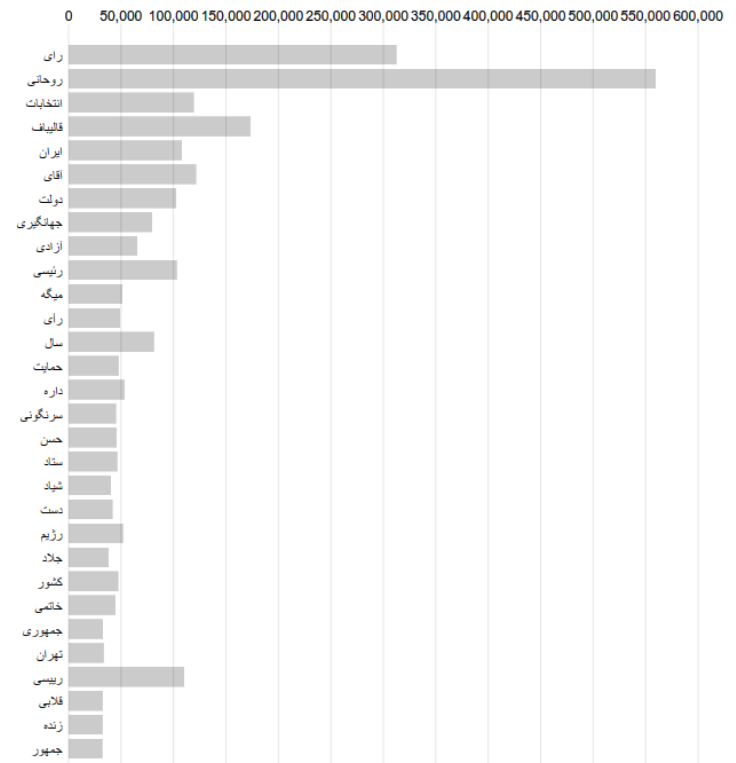
Value of lambda: 1

Click elements below to freeze selection



Click here to clear selection

Most salient tokens

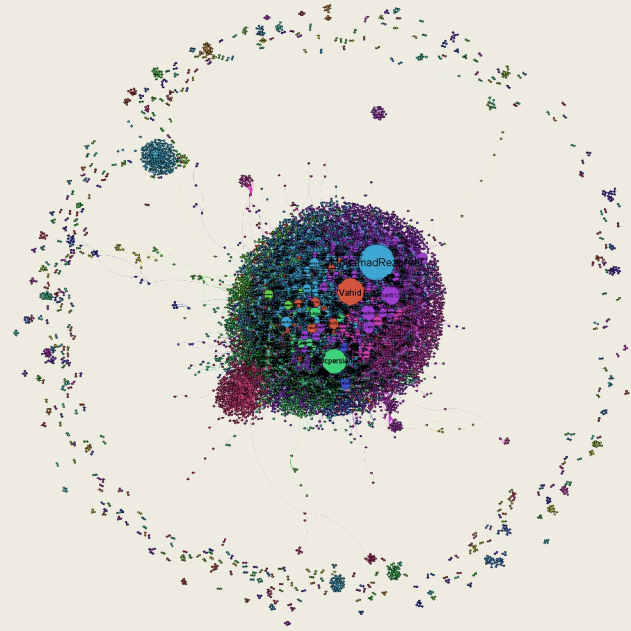


Conclusion

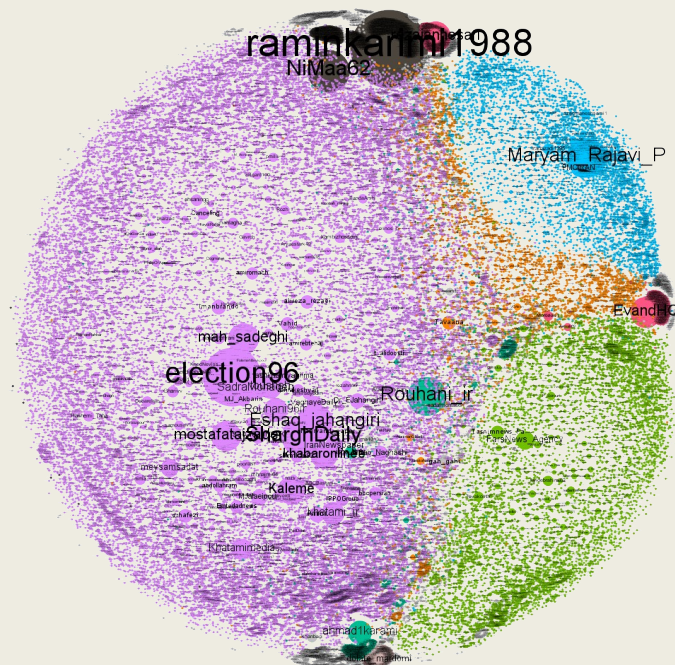
- Persian Twitter had a growth rate much faster than global trends
- The environment and practices are transforming
- The power structure has changed from social media celebrities to institutional elites
- Still predominantly in favor of reformists, but there is more critical perspectives

Future work

- Further exploration of text mining and machine learning for mapping the environment e.g., experimenting with Tweet2Vec
- Expanding training data and improving text mining results
- Investigating the role and the reach of automated accounts



Thank You!



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@seakha

<http://khazraee.com>