

Inferring Travel from Social Media

Alessio Signorini <alessio-signorini@uiowa.edu>

Alberto Maria Segre <alberto-segre@uiowa.edu>

Philip Polgreen <philip-polgreen@uiowa.edu>

THE UNIVERSITY OF IOWA COMP EPI computational epidemiology research

ONCE UPON A TIME...











lexarod Lexa Mendoza Off to work going home now long day in work so happy I'm going home now so tired I'm still sick with flu 🙁 48 minutes ago



TweetsByClaudia Claudia M.



rubygreen1 ruby green i don't think i have ever been this sick had the flu last night, woke up this morning with the biggest and most painful cramps in my tommy. 2 hours ago



SelenaSeesStars Selena Martinez Eating a hamburger that my mommy made me. ^.^ 1 hour ago

5



viagraviagras cheap viagra order Viagra buy dublin, buy cheap online Sildenafil Citrate generic ...: We offer Viagra online for lowest pric... bit.ly/etelnY 35 minutes ago



AimVezina Aim Vezina eating hamburger for dinner ^^ yummmy 26 Nov



MiaMcK MiaMcK

brother was **sick** on **thanksgiving**...coworker is **sick** at the **job**...breathing in all kinds of recycled germs. ugh! no wonder i feel icky! 26 Nov



DarrienBree Darrien Bree Buchana The fact that im sitting home by myself on a Friday night because im **sick**, steep throat, sinus infection, andto top it off the **FLU**. #mylife. 1 hour ago



jordanbby7717 Jordan Daniel I seriously can't take working at my job anymore. So sick of dealing with the people I work with and customers #getmeoutofhere 34 minutes ago



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lexarod Lexa Mendoza Off to work going home now long day in work so happy I'm going home now so tired I'm still sick with flu (2) 48 minutes ago



TweetsByClaudia Claudia M. Watching another gorgeous Nashville sunset while walking my dog :) lockerz.com/s/161473169 1 hour ago



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H1N1 TWEET VOLUME







AMERICAN IDOL 2009







REAL-TIME ILI% ESTIMATE

Reported vs. Predicted Weekly ILI%

Flu Season 2009-2010 - United States



1-fold validation ~ error avg=0.28%, min=0.04%, max=0.93%. Std=0.23%





DEFINITELY A GOOD IDEA!



Powerfully Simple"





SICK PEOPLE STILL TRAVEL



TRAVEL MODEL



CURRENT FLU MAP





GPS ADDED TO CELL PHONES

GPS ADDED TO CELL PHONES

htc

BlackBerry.

LOCATION-BASED APPS

FOCUSING ON THE MOST POPULAR

CHECK-IN TO PLACES TO EARN BADGES

jason_sosa Jason Sosa ♀ @Jason Talking #entrepreneurialism and Watching "Be a Samurai" video with my dad 27 Nov

from New York New York, US View Tweets about this place

TWEETS CAN BE GEO-LOCATED

FOLLOW PEOPLE EVERYWHERE

DATA COLLECTED

Number of Locations

Number of Users

6 MILLION

DATA CLEANUP

CASUAL USERS (<5 locations)

TOO FREQUENT (>1 every 5 secs)

TOO FAST (>1800 km/h)

DISTANCE TRAVELLED

■ % Trips → % Cumulative

TIME INTERVAL

■ % Trips → % Cumulative

TRIPS vs. DISTANCE

% Trips Miles

TYPICAL NEW YORK CITY DAY

6 AM

2 PM

8 PM

TRACKING INDIVIDUALS

AGGREGATES BETWEEN U.S. STATES

WHERE TO GET MORE INFORMATION

Alessio Signorini

alessio-signorini@uiowa.edu http://www.cs.uiowa.edu/~asignori/

UIOWA Computational Epidemiology Group http://compepi.cs.uiowa.edu

paper and datasets will be soon available on the CompEpi website

