

# ICOS big data camp



May 19-22 and 29, 2014  
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# Who is everybody?

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- Executive producer:
  - ~ Matt Burton
- Producers:
  - ~ Jerry Davis, Cliff Lampe, Brian Noble, Jason Owen-Smith
- Code Concierges (CoCons):
  - ~ Khevna Shah, Nick Repole, Guarav Singhal, Tyler Markvluwer, Jonathan Pevarnek, Deep Patel, Matt Baumgartner

# What are we up to this week?

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- Monday: overview, hero's journeys, forming groups for projects
- Tuesday: SQL
- Wednesday: Python
- Thursday: using APIs
- Friday: write “Social capital asset pricing model (SCAPM)” app for iPhone, sell to Facebook for \$10B, quit grad school

# What does social life look like today?

Consultant running meeting on Google Hangouts



Real estate agent checking listings



Journalist applying for job



Student writing paper for class



Professor grading papers



Activist uploading files to WikiLeaks

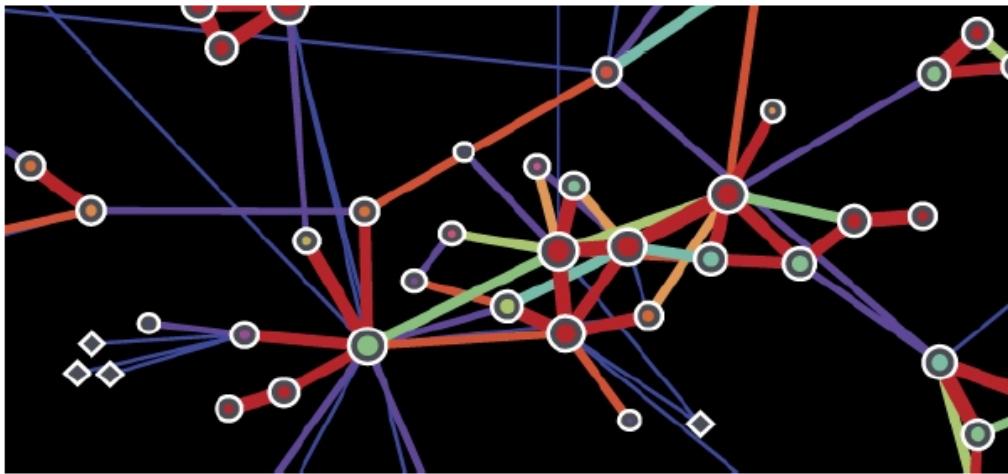


# Computational social science: Making the links

From e-mails to social networks, the digital traces left by life in the modern world are transforming social science.

Jim Giles

22 August 2012 Corrected: 31 August 2012



Jon Kleinberg's early work was not for the mathematically faint of heart. His first publication<sup>1</sup>, in 1992, was a computer-science paper with contents as dense as its title: 'On dynamic Voronoi diagrams and the minimum Hausdorff distance for point sets under Euclidean motion in the plane'.

That was before the World-Wide Web exploded across the planet, driven by millions of individual users making independent decisions about who and what to link to. And it was before Kleinberg began to study the vast array of digital by-products generated by life in the modern world, from e-mails, mobile phone calls and credit-card purchases to Internet searches and social networks. Today, as a computer scientist at Cornell University in Ithaca, New York, Kleinberg uses these data to write papers such as 'How bad is forming your own opinion?'<sup>2</sup> and 'You had me at hello: how phrasing affects memorability'<sup>3</sup> — titles that would be at home in a social-science journal.

"I realized that computer science is not just about technology," he explains. "It is also a human topic."

Kleinberg is not alone. The emerging field of computational social science is attracting mathematically inclined scientists in ever-increasing numbers. This, in turn, is spurring the creation of academic departments and prompting companies such as the social-network giant Facebook, based in Menlo Park, California, to establish research teams to understand the structure of their networks and how information spreads across them.

"It's been really transformative," says Michael Macy, a social scientist at Cornell and one of 15 co-authors of a 2009

## Related stories

- Facebook 'likes' the scientific method
- Sociology of science: Big data deserve a bigger audience
- Social science: Open up

Thanks to ICTs, economics today is “roughly where astronomy was when the telescope was invented or where biology was when the microscope was invented.” (Robert Shiller, smart guy)



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# HOW SHOULD THE PERVERSIVE “MEDIATION” OF CONTEMPORARY SOCIAL LIFE AFFECT SOCIAL SCIENCE?

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# Google Trends: the gateway drug for big data

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# NEW INSIGHTS INTO TRADITIONAL TOPICS

# Does racism influence voting?

The New York Times

## Campaign Stops

STRONG OPINIONS ON THE 2012 ELECTION

JUNE 9, 2012, 5:46 PM

### How Racist Are We? Ask Google

By SETH STEPHENS-DAVIDOWITZ

Barack Obama won 52.9 percent of the popular vote in 2008 and 365 electoral votes, 95 more than he needed. Many naturally concluded that prejudice was not a major factor against a black presidential candidate in modern America. My research, a comparison of Americans' Google searches and their voting patterns, found otherwise. If my results are correct, racial animus cost Mr. Obama many more votes than we may have realized.

Quantifying the effects of racial prejudice on voting is notoriously problematic. Few people admit bias in surveys. So I used a new tool, Google Insights, which tells researchers how often words are searched in different parts of the United States.

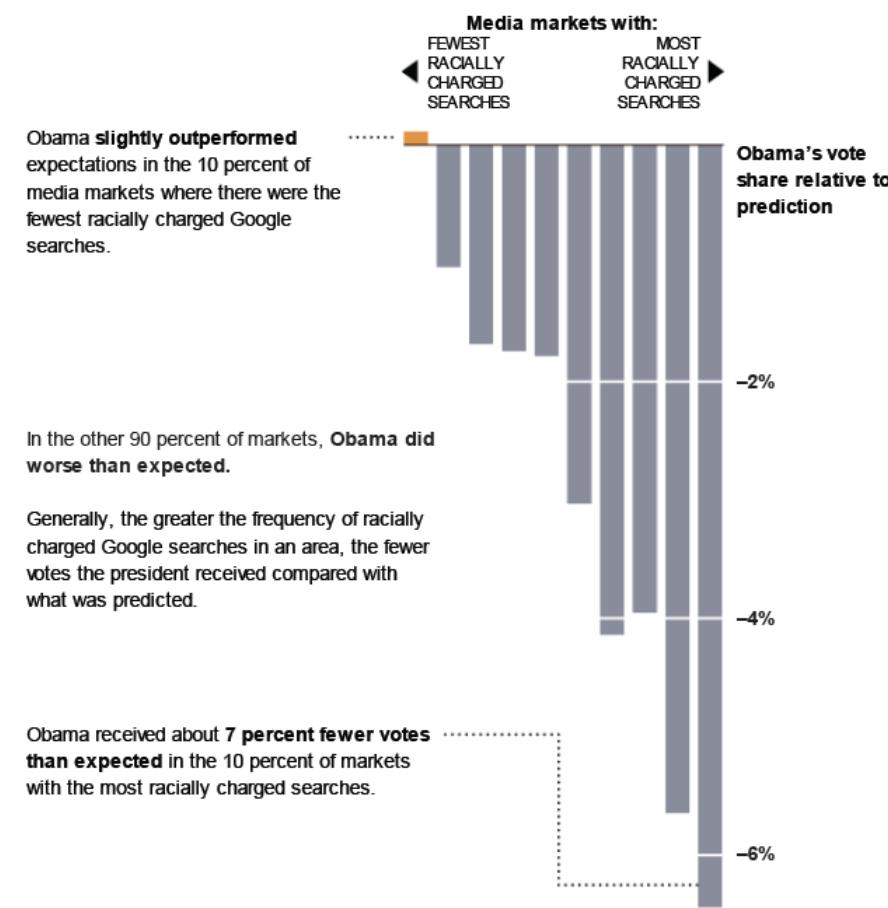
Can we really quantify racial prejudice in different parts of the country based solely on how often certain words are used on Google? Not perfectly, but remarkably well. Google, aggregating information from billions of searches, has an uncanny ability to reveal meaningful social patterns. "God" is Googled more often in the Bible Belt, "Lakers" in Los Angeles.

The conditions under which people use Google - online, most likely alone, not participating in an official survey - are ideal for capturing what they are really thinking and feeling. You may have typed things into Google that you would hesitate to admit in polite company. I certainly have. The majority of Americans have as well: we Google the word "porn" more often than the word "weather."

And many Americans use Google to find racially charged material. I performed the somewhat unpleasant task of ranking states and media markets in the United States based on the proportion of their Google searches that included the word "nigger(s)." This word was included in roughly the same number of Google searches as terms like "Lakers," "Daily Show," "migraine" and "economist."

### Racially Charged Web Searches and Voting

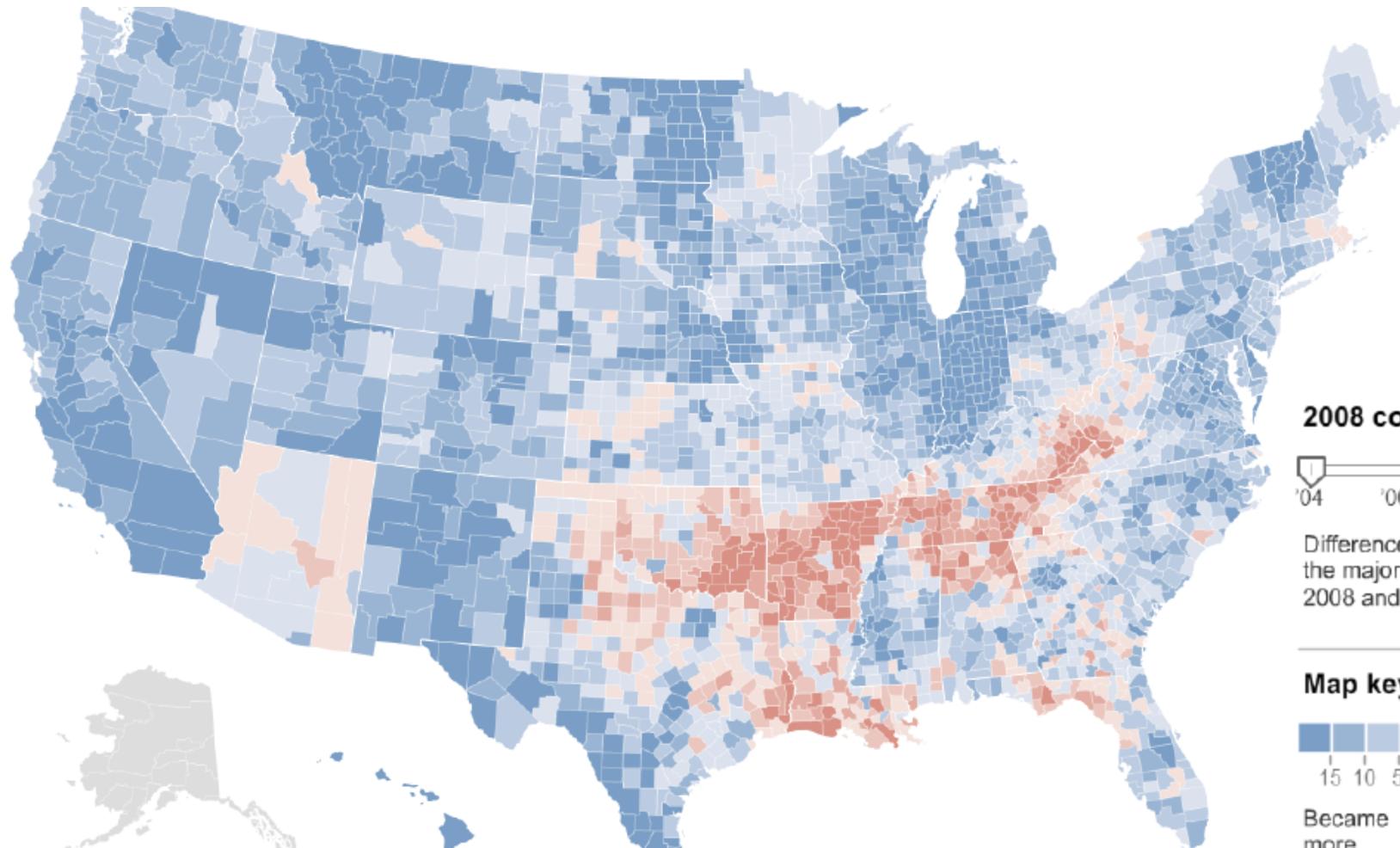
In 2008, Barack Obama performed much worse than expected in areas with the greatest frequency of racially charged Google searches. The analysis looked at Web searches in 200 United States media markets.



[Send Feedback](#)

Source: "The Effects of Racial Animus on Voting: Evidence Using Google Search Data," Seth Stephens-Davidowitz

# Does racism influence voting?



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# NEW INSIGHTS INTO NEW TOPICS

# E.g., ICTs and social movements

facebook Search Home Profile Account ▾

Add to My Page's Favorites

**Mohammed Bouazizi the Tunisian HERO**

Wall Info Photos Discussions

Mohammed Bouazizi the Tunisian HERO + Others  
Just Mohammed Bouazizi the Tunisian HERO Just Others

**Mohammed Bouazizi the Tunisian HERO**

**An uprising in Tunisia**

[www.boston.com](http://www.boston.com)

Beginning in December of last year, a series of ongoing protests in the streets of Tunisia escalated to the point where President Zine el-Abidine Ben Ali - who had ruled the country for 23 years - at first declared he would not seek re-election, then fled the country on January 14th. An interim gove

January 21 at 7:08am · Share

**Mohammed Bouazizi the Tunisian HERO**

**Presidential elections to be held within 60 days in Tunisia**

[www.almasryalyoum.com](http://www.almasryalyoum.com)

The presidency in Tunisia has been declared officially vacant, Al Jazeera reported.

January 15 at 12:19pm · Share

3 people like this.

**Meriem Lkhalil** la ilaha illa lah mohammad rasoul lah

[January 20 at 5:13am · Flag](#)

**Mohammed Bouazizi the Tunisian HERO** [http://www.youtube.com/watch?v=Ybv4GW\\_II8c](http://www.youtube.com/watch?v=Ybv4GW_II8c)

**France24 - Entre tristesse et colère, Sidi Bouzid enterre Mohamed Bouazizi**

[www.youtube.com](http://www.youtube.com)

[05-01-2011](#)

January 14 at 2:15pm · Share

**Mohammed Bouazizi the Tunisian HERO**

**Tunisie Ben Ali Enterrement Bouazizi 4/1/2011** [تونس بن علي جنازه بوعزيزي 4/1/2011](#)

[Create an Ad](#)

**Hegel Made Fun**

Meyer Abrams said, "It makes you smile, or even laugh aloud, while remaining, remarkably, a serious and comprehensive demolition."

**1 Flat Abs Tip**

[31dayfatlosscure.com](http://31dayfatlosscure.com)

This "strange" video reveals 1 little known ab exercise that gives men flat abs...Click here to see it.

**See your public record**

[search.mylife.com](http://search.mylife.com)

Enter your name to see publicly available information from public records and the web with Mylife

**New Flight Sim!**

Chat (3)

Internet

10

# What do these organizations have in common?

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**mozilla**  
CORPORATION



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January 31, 2012

## Cancer Group Halts Financing to Planned Parenthood

By **PAM BELLUCK**

In a decision that is inflaming passions on both sides of the abortion debate, the world's largest breast cancer organization, [Susan G. Komen for the Cure](#), is cutting off its financing of breast cancer screening and education programs run by Planned Parenthood affiliates.

The move will halt financing to 19 of Planned Parenthood's 83 affiliates, which received nearly \$700,000 from the Komen foundation last year and have been receiving similar grants since at least 2005.

Planned Parenthood contends that the Komen foundation is yielding to longstanding pressure from anti-abortion groups, which Komen denies.

A spokeswoman for the Komen foundation, Leslie Aun, told The Associated Press that the main factor in the decision was a new rule adopted by Komen that prohibits grants to organizations being investigated by local, state or federal authorities. Ms. Aun told The A.P. that Planned Parenthood was therefore disqualified from financing because of an inquiry being conducted by Representative Cliff Stearns, Republican of Florida, who is looking at how Planned Parenthood spends and reports its money.

After the A.P. article was posted on Tuesday afternoon, the Komen foundation declined to make Ms. Aun or another staff member available to discuss the Planned Parenthood decision. The foundation issued a statement saying it was seeking to "strengthen our grants program" and had "implemented more stringent eligibility and performance criteria."

The statement added, "While it is regrettable when changes in priorities and policies affect any of our grantees, such as a longstanding partner like Planned Parenthood, we must continue to evolve to best meet the needs of the women we serve and most fully advance our mission."

Cecile Richards, the president of Planned Parenthood, said that the decision "came so abruptly in the face of a long, good, working relationship with Komen" and that the change in financing criteria "was written specifically to address the political pressure that they've been under."

Ms. Richards said all of Planned Parenthood's affiliates provided around 770,000 women with breast examinations and paid for mammograms and ultrasounds for

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JOBSEVENTS

 qbeats inc is looking for a Social Media Manager. 

## Facebook Users Protest Susan G. Komen De-Funding Planned Parenthood

Jennifer Moira on February 1, 2012 9:08 PM

The group famous for the breast cancer pink ribbon faces about 20 negative posts per minute on Facebook over the sudden decision to pull funding of preventative breast cancer programs, such as mammograms, for low-income women at Planned Parenthood affiliates.



Komen claims that since Planned Parenthood is facing a congressional investigation, its newly revised rules won't allow funding of such programs.

Most posts on Facebook take Planned Parenthood's side of things, arguing that Komen's decision was based on pressure from right-wing groups.

The anti-Komen sentiment on Facebook is picking up steam, with posts appearing every 25-45 seconds on average today. Facebook posts supporting Komen's decision are just starting to show up online, and some of these are featured below.

The online campaign pressuring Komen to reverse course is following a familiar template: resharing of the same links and paid Facebook advertising.

The most common among them is a pink profile image with a message from Credo Action saying, "Tell Komen Not to Throw Planned Parenthood Under the Bus." Another link is from Planned Parenthood itself, asking Facebook friends to like and share a link titled, "I Still Stand with Planned Parenthood."

These are some of the same Facebook tactics used in other high-profile advocacy campaigns, such as the petition drive to recall Wisconsin Governor Scott Walker.

We expect to see pages dedicated to the issue start cropping up on Facebook.

Meanwhile, readers, what do you think will be the next phase of the Facebook campaign to



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## Featured Employers



THE  
HUFFINGTON  
POST



## Social Media Jobs of the Day

**Social Media Manager**  
qbeats inc in New York, NY

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February 3, 2012

## Cancer Group Backs Down on Cutting Off Planned Parenthood

By **PAM BELLUCK, JENNIFER PRESTON** and **GARDINER HARRIS**

When the nation's pre-eminent breast cancer advocacy group, the Susan G. Komen for the Cure foundation, decided to stop most of its financing of Planned Parenthood in December, Komen's leaders hoped to quietly distance the foundation from a politically controversial organization that they feared was costing them support and donations, a board member said.

But when the move became public on Tuesday, Nancy G. Brinker, the polished Republican donor who founded Komen after her sister died of breast cancer, and other leaders of the organization were completely caught off guard by the deluge of outrage online, within the foundation's own ranks and in Congress. On Friday, Ms. Brinker reversed course and restored Komen's relationship with Planned Parenthood, which has used the Komen money to provide breast cancer screening and education to thousands of low-income women.

"We want to apologize to the American public for recent decisions that cast doubt upon our commitment to our mission of saving women's lives," Ms. Brinker said in a statement.

The group's leaders first sought to hold their ground. On Thursday, they tried to communicate their message directly to supporters with a video from Ms. Brinker on YouTube, with posts on Facebook and with Twitter messages and interviews with reporters.

But longtime supporters, corporate sponsors and scientific and medical professionals with ties to Komen were growing increasingly concerned. The online drumbeat became impossible to ignore. And it wasn't just abortion rights activists denouncing Komen but also some of the foundation's longtime supporters, who were furious that the fight against breast cancer had been drawn into partisan battles.

By the end of the week, Twitter users had sent more than 1.3 million posts mentioning Planned Parenthood, the Susan G. Komen for the Cure foundation and related terms and hashtags. On Thursday alone, there were more than 460,000 Tweets.

"They listened carefully to many people, including many of the scientists and clinicians," a senior **cancer** researcher with close ties to Komen said. "They recognized that

Jerry Davis  
Edit Profile

## EVENTS

[15 My Events](#)[Calendar](#)[Create](#)

## THIS WEEK

SFP's Wake/Benefit for B...

Saturday at 8:00pm

FEB  
14

## Starbucks Appreciation Day: Thanks for Allowing Legal Handgun Carry

Public · Hosted by Galen Wagner

[Join](#) [Maybe](#) [...](#) Tuesday, February 14, 2012 at 12:00am - 11:30pm  
More than a year ago

Starbucks Coffee Locations Nationwide

\*\*\*\*\*PLEASE MAKE SURE YOU KNOW YOUR LOCAL CARRY LAWS.  
STARBUCKS IS OK WITH WHATEVER IS LEGAL IN YOUR AREA\*\*\*\*\*

Hopefully most of you are aware that Starbucks Coffee has taken a position that lawful open carry of firearms is allowed in their stores. This policy has enraged anti-gun groups everywhere.a new anti gun gr...  
[See More](#)



Andrew Denial

January 17, 2013

It's really great : <http://legaldocsphoenix.com/>Legal Documents Preparer:  
Phoenix, Arizona

Legal Documents preparer in Phoenix, AZ - Alan's Legal Documents. Perfect Legal Documents for the Unrepresented.

LEGALDOCSPHOENIX.COM

## GUESTS

1.6K going    177 maybe    8.8K invited

## SUGGESTED EVENTS

[The Last Service: A memorial...](#)  
Sunday at 2860 Woodward Av...  
51 guests[Benefit Concert for Michigan ...](#)  
Sun, Jun 1 at The Ark  
11 guests[RBMA Presents Soul Clap's H...](#)  
Sat, May 24 at Movement Elect...  
485 guests[Movement Electronic Music F...](#)  
Sat, May 24 at Movement Elect...  
4,705 guests[March Against Monsanto Ann...](#)  
Sat, May 24 at Liberty Plaza  
1,666 guests[Ghostly 15 Official Movement ...](#)  
Fri, May 23 at St. Andrews Hall  
409 guests

Noam Schafer likes Pour Cleveland's post.



Jess Daniel likes Malik Yakini's status.



Joeline Brzezinski and Kathy Pass Pereira are now friends.



David Jacobs commented on Joshua Miller's status.



Lilly Brown likes Peter Wery's photo.



Connie Boudens Professor is going to write some form email responses to



Gautam Mukunda Mobile ●



Omar Lizardo Mobile ●



Kevin R McNamee Web ●



Christie Brown Mobile ●



Tracy Thompson Web ●



Julian Atanassov Mobile ●



Connie Boudens Web ●

## MORE FRIENDS (2)



Matthew Major Mobile ●



Russ Coff Web ●

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MICHIGAN M

ROSS SCHOOL OF BUSINESS

August 9, 2013

## At Newtown Starbucks, a Gun Event Is Shut Out

By PETER APPLEGATE and ELIZABETH MAKER

The nation's gun owners declared Friday Starbucks Appreciation Day, but in Newtown, Conn., not everyone seemed very appreciative.

Instead, the local Starbucks closed five hours early, disappointing some gun owners who had planned to show up wearing holstered pistols to make a statement in favor of gun rights and Starbucks' policies.

The event had already infuriated many residents still reeling from the murder of 26 children and educators at Sandy Hook Elementary School in December.

A sign at the coffee shop read: "Out of respect for Newtown and everything our community has been through, we have decided to close our store early today."

Earlier, however, more than two dozen gun rights supporters, some wearing pistols, camouflage or Connecticut Citizens Defense League T-shirts, showed up to show their support. The company said it had no participation in the event. Gun critics also turned out to voice their opposition.

Long after the store shut down around 4:30, people on both sides of the gun divide stayed outside in the heavy rain, the gun supporters standing on the left, many smoking cigarettes, and the gun opponents to the right, holding lighted candles.

"Little do these ignorant people know that we come in here every day for coffee, carrying our weapons," said Tom Catalina, 64, of Newtown. "Starbucks has always been open about their support of the Second Amendment and our right to carry, whether open or concealed. Guns make people safer."

The anti-gun crowd wound up getting their coffee and doughnuts from Dunkin' Donuts down the road, and passed out pins that read, "Moms Demand Action for Gun Sense in America."

One of them was Barbara Kraushaar, 62, who lives around the corner from the home of Adam Lanza, the gunman who killed the students and school employees at Sandy Hook on Dec. 14. "Hey! Did you know you're not allowed to smoke on Starbucks property?" she yelled to one of the men carrying a gun. "You don't care about anything, just what pertains to you!"

The man walked away a bit but did not put out his cigarette.

September 18, 2013

## Starbucks Seeks to Keep Guns Out of Its Coffee Shops

By STEPHANIE STROM

Tired of being thrust onto the front lines of the nation's debate over guns, Starbucks is asking customers to leave firearms behind when they are in its stores and its outdoor seating areas.

The policy change came after a shooting rampage at the Washington Navy Yard on Monday that left 13 people, including the gunman, dead. But Starbucks said its decision was not in response to that or to the shooting spree that killed 26 children and adults at the Sandy Hook Elementary School in Newtown, Conn., just days before Christmas last year.

"I've spent a significant amount of personal time on this issue in the last several months and I've seen the emotionally charged nature of this issue and how polarizing it is on both sides," Howard Schultz, the chief executive of Starbucks, said in a telephone interview. "Nevertheless, customers in many stores have been jarred and fairly uncomfortable to see guns in our stores, not understanding the issue and feeling that guns should not be part of the Starbucks experience, especially when small kids are around."

Under the change, baristas and other store employees will not ask customers who come in with guns in holsters, say, to leave or confront them in any way, Mr. Schultz said. No signs explaining the policy will be posted in Starbucks stores, either.

"We are going to serve them as we would serve anyone else," he said. "There are going to be people on both sides who will be disappointed or angry, but we're making a decision we think is in the best interests of our customers, employees and the company." He said store officials would evaluate compliance over time and consider posting signs if necessary.

A majority of company-owned Starbucks stores are in states that allow people to openly carry guns, although restrictions and limitations vary from state to state. The company has had a handful of armed robberies in its stores over the years, as well as two recent incidents where guns carried in women's purses have discharged accidentally, but little other gun violence in its stores.

Under its previous policy, however, Starbucks has been unwillingly co-opted by proponents of "open carry" policies and vilified by those seeking stricter laws on gun ownership. Garry Trudeau devoted six consecutive days of his *Doonesbury* comic strip in 2010 to mocking the company's stance, which opened with a barista greeting a

# THE WALL STREET JOURNAL.

TECHNOLOGY

## Mozilla CEO Brendan Eich Steps Down

*Attention Focused on His Support of an Anti-Gay Marriage Ballot Proposal*

By ALISTAIR BARR

Updated April 3, 2014 10:50 p.m. ET



Mozilla CEO Brendan Eich has stepped down less than two weeks after his promotion, following a social media uproar from employees over his political contributions. How should companies vet their executives in the age of social media? Heard on the Street's Miriam Gottfried joins the News Hub. Photo: Mozilla.

A prominent Silicon Valley chief executive stepped down just days after his [appointment](#), amid a firestorm across the Internet that was sparked by employees who complained about his opposition to gay marriage.

Brendan Eich resigned from Mozilla, the organization behind the Firefox Web browser, after [intense criticism](#) over a six-year-old, \$1,000 donation he made in support of a 2008 California ballot initiative to ban gay marriage.

The record of that donation appeared on the Internet soon after Mr. Eich, who invented JavaScript and helped start Mozilla in 1998, was appointed as CEO in late March. After he was named, some Mozilla employees took to Twitter to call for his resignation. Mr. Eich then apologized for causing "pain" and made a commitment to promote equality for gay and lesbian individuals at Mozilla.

Mr. Eich's resignation spurred debate on Thursday over whether his right to his own political views was effectively squelched.

# Surprising sources of network data

January 26, 2011 12:05 PM PST

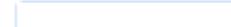
## Senator proposes mobile-privacy legislation

by [Declan McCullagh](#)

132

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374



Federal law needs to be updated to halt the common police practice of tracking the whereabouts of Americans' mobile devices without a search warrant, a Democratic senator said today.

[Ron Wyden](#), an Oregon Democrat, said it was time for Congress to put an end to this privacy-intrusive practice, which the Obama Justice Department has [sought to defend in court](#).

In an [luncheon speech](#) at the libertarian [Cato Institute](#) in Washington, D.C., Wyden said his staff was drafting legislation to restore "the balance necessary to protect individual rights" by requiring police to obtain a search warrant signed by a judge before obtaining location information.

Even though police are tapping into the locations of mobile phones thousands of times a year, the legal ground rules remain hazy, and courts [have been divided](#) on the constitutionality and legality of the controversial practice. In September, the first federal appeals court to [rule on the legality](#) indicated that no search warrant was needed, but sent the case back to a district judge for further proceedings.



Sen. Wyden (right) tells Cato Institute audience that tracking cell phones is as privacy-invasive as searching someone's home.

TECHNOLOGY | APRIL 22, 2011

## Apple, Google Collect User Data

By JULIA ANGWIN And JENNIFER VALENTINO-DEVRIES



WSJ.com Senior Technology Editor Julia Angwin reports Apple's iPhone and Google's Android regularly transmit user location data back to those companies, based on data analyzed by The Wall Street Journal.

[Apple Inc.](#)'s iPhones and [Google Inc.](#)'s Android smartphones regularly transmit their locations back to Apple and Google, respectively, according to data and documents analyzed by The Wall Street Journal—intensifying concerns over privacy and the widening trade in personal data.

# Computers, Too, Can Give Away Location

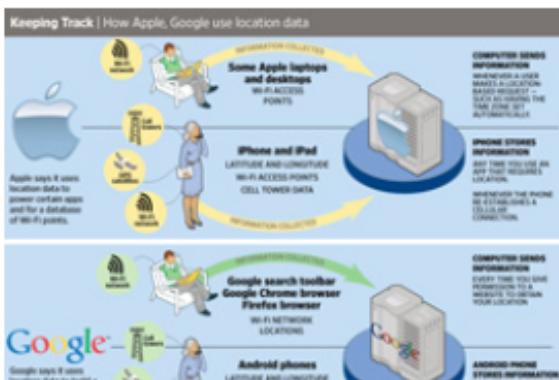
By AMIR EFRATI And JENNIFER VALENTINO-DEVRIES

**Google Inc.** and **Apple Inc.** collect and store location information from personal computers, as well as mobile devices, according to company executives, a disclosure that sheds new light on the scope of the data collected by tech companies.

Apple gathers information from some Apple Macintosh computers connected to Wi-Fi networks, and Google collects data from Wi-Fi-connected computers that use Google's Chrome browser or search "toolbar."

## Keeping Track

How Apple, Google use location data



They obtain the information after a computer scans the area around itself for available Wi-Fi networks, typically after users give a website permission to determine the computer's approximate location.

A description of the methods came in an interview with a Google product manager and a letter from Apple executives to federal lawmakers. Some of the information is laid out in Google's privacy policy.

In most cases, the companies ask users for permission before gathering information about users' wireless networks and nearby networks. But sometimes when they ask, it isn't clear exactly how the data will be stored and used. Some Apple computers send location information to Apple if a user asks the computer to use his location to automatically display the correct local time.

specific users.

Both companies have said the data they collect are anonymous and aren't tied to

WHAT THEY KNOW | APRIL 23, 2011

## The Really Smart Phone

*Researchers are harvesting a wealth of intimate detail from our cellphone data, uncovering the hidden patterns of our social lives, travels, risk of disease—even our political views.*

By ROBERT LEE HOTZ

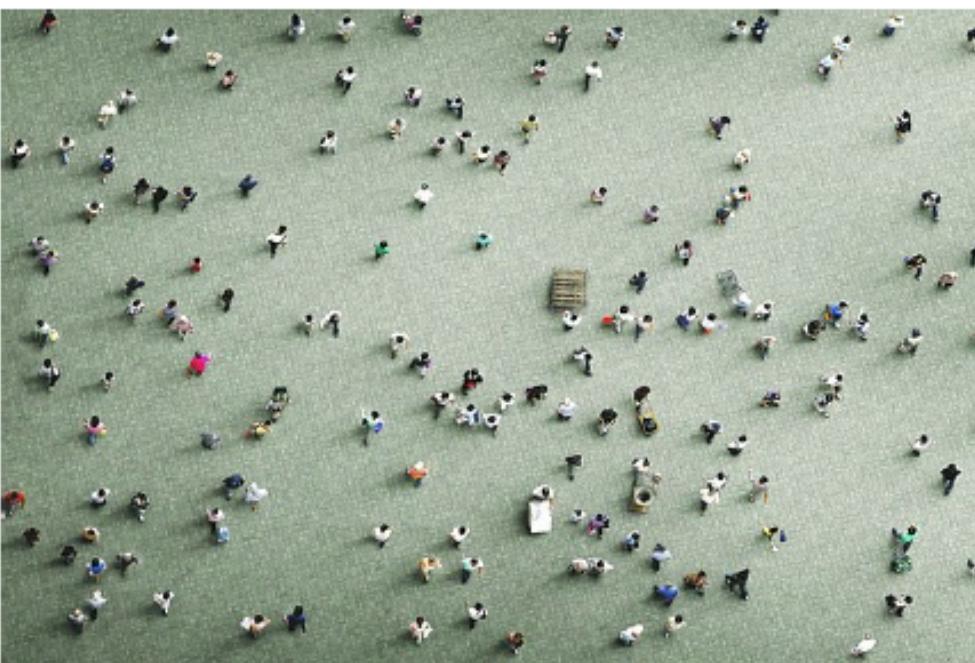


Photo-Illustration by Adam Magyar

"Phones can know," says an MIT researcher. "People can get this and it's our view of human behavior."

For almost two years, Alex Pentland at the Massachusetts Institute of Technology has tracked 60 families living in campus quarters via sensors and software on their smartphones—recording their movements, relationships, moods, health, calling habits and spending. In this wealth of intimate detail, he is finding patterns of human behavior that could reveal how millions of people interact at home, work and play.

Through these and other cellphone research projects, scientists are able to pinpoint "influencers," the people most likely to make others change their minds. The data can predict with uncanny accuracy where people are likely to be at any given time in the future. Cellphone companies are already using these techniques to predict—based on a customer's social circle of friends—which people are most likely to defect to other carriers.

Apple and Google may be intensifying privacy concerns by tracking where and when people use their mobile phones—but the true future of consumer surveillance is taking shape inside the cellphones at a weather-stained apartment complex in Cambridge, Mass.

WHAT THEY KNOW | NOVEMBER 9, 2011

# Judges Weigh Phone Tracking

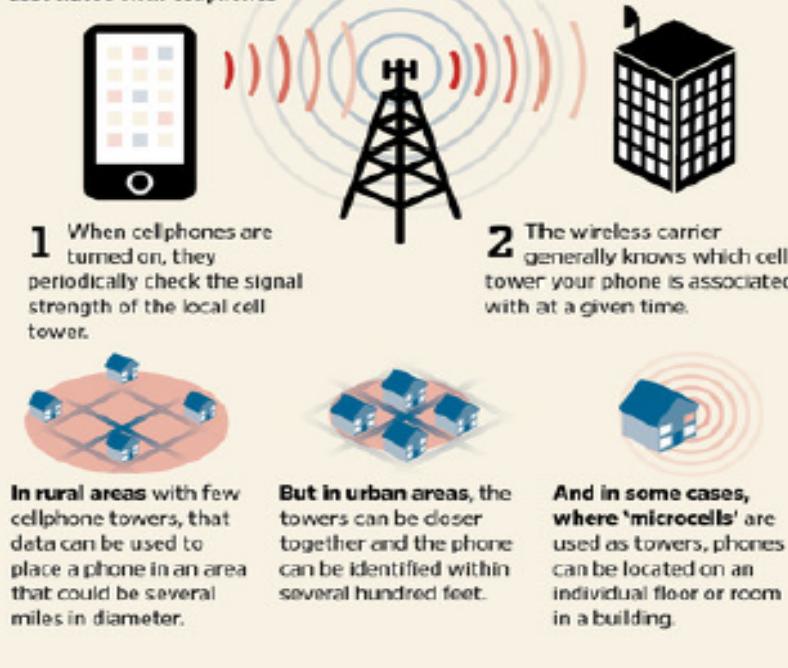
State and federal authorities follow the movements of thousands of Americans each year by secretly monitoring the location of their cellphones, often with little judicial oversight, in a practice facing legal challenges.

Electronic tracking, used by police to investigate such crimes as drug dealing and murder, has become as routine as "looking for fingerprint evidence or DNA evidence," said Gregg Rossman, a prosecutor in Broward County, Fla.

The use of cellphone tracking by authorities is among the most common types of electronic surveillance, exceeding wiretaps and the use of GPS tracking, according to a survey of local, state and federal authorities by The Wall Street Journal.

## Cell-Tower Surveillance

Local, state and federal agents routinely seek information about the towers associated with cellphones



The widening practice also presents one of the biggest privacy questions in a generation: Do police need a search warrant to follow a person's minute-by-minute movements using satellite or cellphone technology?

The Supreme Court heard arguments Tuesday in the case of Antoine Jones, whose movements were electronically tracked for a month after police attached a global positioning satellite, or GPS, device to his wife's Jeep Grand Cherokee. A drug conviction against the Washington, D.C., nightclub owner was overturned on appeal because such intrusive monitoring should require a search warrant, the appeals court said.

The U.S. government argued Tuesday that its use of GPS beepers such as the type in the Jones case was in the "low thousands" each year.

But other lawyers say the court's decision will likely affect the far more common police practice of tracking users of the nation's 327 million cellphones.

Al Gidari, a partner at law firm Perkins Coie whose clients include mobile carriers, told Congress last year that wireless service providers receive an "astronomical" number of requests for user records—including location. "It is not uncommon for law enforcement to ask for a phone to be" tracked every 15 minutes, he said.

# The Technology Helping Repressive Regimes Spy



iStockphoto.com

Software allows repressive governments to track and monitor the movements of dissidents.

obtained from those technologies to torture protesters and dissidents, Elgin tells *Fresh Air* contributor Dave Davies.

"[One Iranian engineer] became caught up in the protest movements after the election of 2009 and he was arrested. He was beaten and put into prison and interrogated 14 times over 50 days," Elgin says. "During these interrogations, not only was he presented with [his] text message transcripts; he was presented with a very sophisticated diagram of who he had called, and then who those people had called. And he was interrogated on every connection within his network of contacts."

The engineer had worked for Ericsson AB, where he had helped install the systems that would later be used in his interrogations.

"The damage that can be done was suddenly very clear to him," Elgin says. "And that led him to want him to talk [to me]. [He] has since fled [Iran], which has made it easier for him."

December 14, 2011

text size A A A

As protesters in the Middle East use social media to organize and communicate, the regimes they're battling are using sophisticated technology to intercept their emails, text messages and cellphone calls.

On Wednesday's *Fresh Air*, journalist Ben Elgin talks about a Bloomberg News series, "[Wired for Repression](#)," which details how Western companies are selling surveillance technology to regimes including Iran, Syria, Bahrain and Tunisia.

Those regimes have then used the information obtained from those technologies to torture protesters and dissidents, Elgin tells *Fresh Air*

## Software that spots hidden networks

# Electronic ties that bind

Technology can help uncover dangerous cliques in companies

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IT IS one of the more unusual cases that Elizabeth Charnock has worked on. Several years ago, Ms Charnock's software company, Cataphora, based in California, analysed the contents of e-mails sent by employees at a firm that had been sued by America's government for supposedly inflating charges on federal contracts. Cataphora's analysis helped to prove that the allegation was groundless. But it also revealed that some executives at the company shared an interest in bondage, lacing their e-mails to one another with references to their proclivity but making no mention of it in correspondence with other staff.

In this instance, the result was simply deep embarrassment. But other companies have ended up in serious trouble because of hidden networks. "In internal corporate investigations you often find informal cliques that communicate in ways designed to execute a fraud or to cover it up," says Robert Sherry, a partner at K&L Gates, a law firm. The recession increases the risk that such groups of rogue employees will be tempted to engage in wrongdoing to protect their jobs



Illustration by Claudio Munoz

That is why firms such as Cataphora and RenewData that specialise in e-discovery—the practice of mining electronic records to unearth important data and relationships—are seeing healthy demand for their services. Cataphora's software lets firms analyse everything from e-mails to electronic calendars and thus build a picture of typical patterns of communication across their operations. It then flags exceptions to those patterns, such as individuals who send many messages to one another even though they are not in the same unit and have little reason to interact.

The software can dig deeper still by analysing linguistic patterns. In one case, Cataphora spotted a link between several executives at a firm that had been issuing bogus invoices to inflate its revenues. A program flagged that the executives, who were all in on the scam, had been using the same unusual sign-off phrase in their e-mails, which turned out to be associated with a college fraternity to which they had all belonged.

# Some big data questions

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- Where do I get “big data”? Is there some secret handshake I need?
- What does it look like?
- How do I make gigabytes of words and numbers into something meaningful?
- If I can’t learn to do everything I need about big data in a week, where can I go next?

# How big is big data?

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- Visit your favorite website (e.g., [www.umich.edu](http://www.umich.edu))
- Right-click and “View page source”
- Wait, what *is* all this stuff?
- Search for <http://>
- Is there some convenient way to search through all this junk online, copy it, and drop it into a database for future use? (Will the site’s owner get mad?)
- Is there an easier way to just download all this stuff in bulk?

# A method and three tools to start

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- The method: learning in groups (cf. “agile software development”)
- The tools:
  - ~ SQL: how to manipulate those databases underlying what you see on the Web
  - ~ Python: a pretty good open-source programming language
  - ~ APIs: how to get them to talk to you

# The deliverable

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Find one interesting true thing to say about your group's topic by one week from Thursday afternoon, and explain how you got there

# Group formation process

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**Groups will be formed on the basis of shared interest in a topic**

1. Head to the area with the topic that most interests you
2. Discuss prospects with other people there
3. After 10 minutes: BREAK and go back to your seat
4. Repeat Step 1; you may choose to go to another area
5. After 7 minutes: BREAK and go back to seat
6. Final round; groups finalized

**Constraints:**

1. Groups must have at least 3 people, and no more than 6
2. Aim to have at least 3 departments/areas represented; good to have at least one person who knows what “API” means