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# Telling Stories with Web Archives

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# Telling Stories with Web Archives

**Dr. Michele C. Weigle**

Web Sciences and Digital Libraries (WS-DL) Lab

Department of Computer Science

Old Dominion University

Norfolk, VA

Includes joint work with Dr. Michael L. Nelson and our PhD students, Scott Ainsworth, Yasmin AlNoamany, Ahmed AlSum, Justin Brunelle, Mat Kelly, Hany SalahEldeen

Southeast Women in Computing Conference

November 16, 2013

# Outline

- What is a web archive?
- Why are archives important?
- What's my story?
- How can we help others tell their stories?
- Related WS-DL Projects

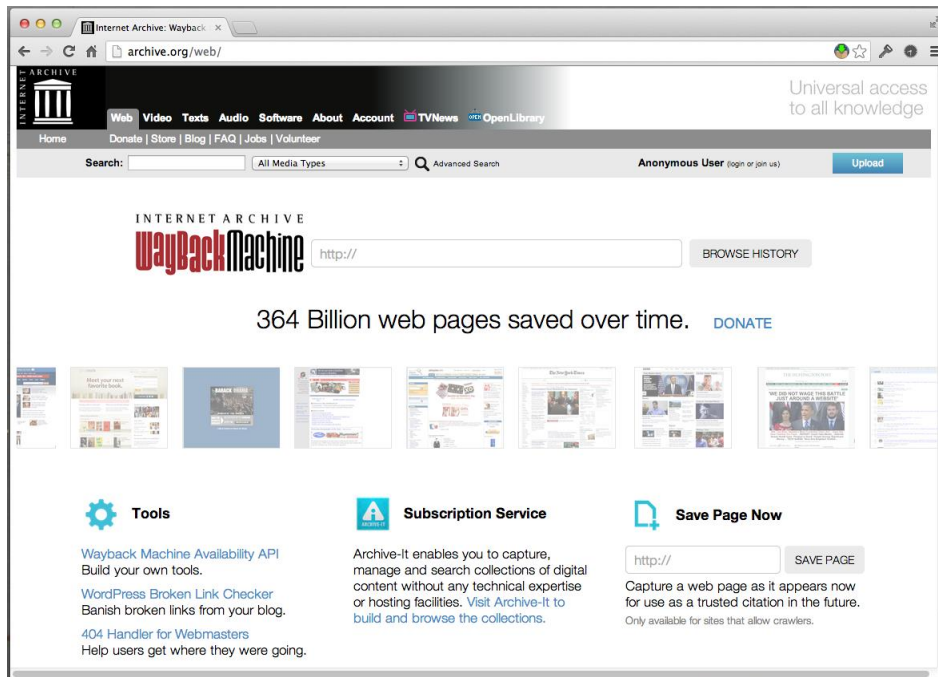
# What is a web archive?

The image displays four browser windows showing the CNN website as it appeared in 2009, accessed via the Wayback Machine. The windows show different dates: August 15, 2009; June 9, 2009; and December 31, 2010. The pages feature news articles such as "Clinton says to brighten mood", "Bush meets pope for Iraq", "House, Sen. over health care", and "Lessons learned from college dropouts". The Wayback Machine interface is visible at the top of each window, showing the date and time of the capture.

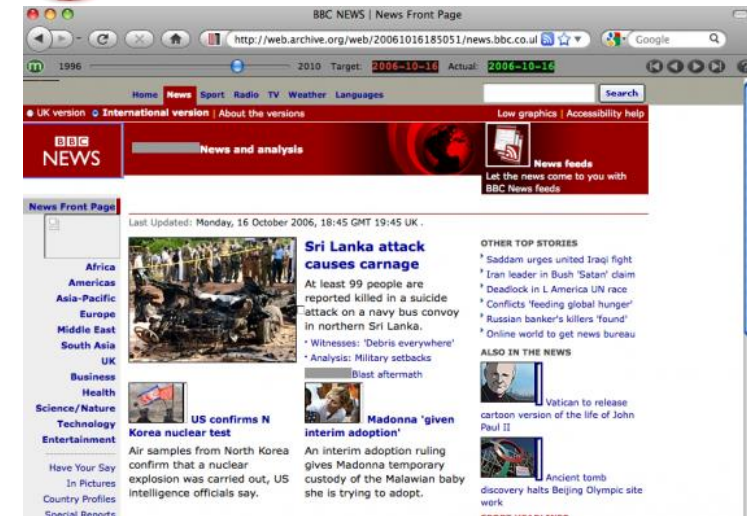
# What are some web archives?



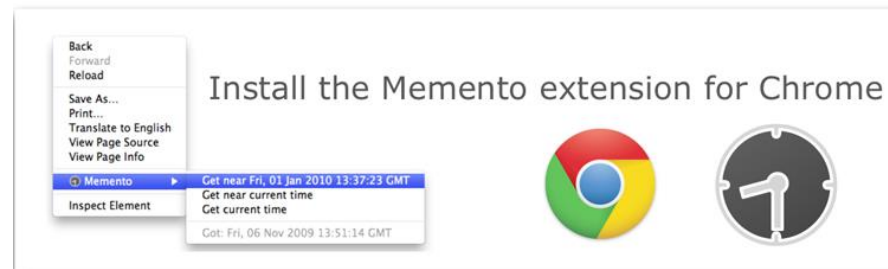
# How can I access the archives?



MementoFox



Memento for Chrome



<http://www.mementoweb.org/>

<http://ws-dl.blogspot.com/2010/03/2010-03-19-mementofox-add-on-released.html>  
<http://ws-dl.blogspot.com/2013/10/2013-10-14-right-click-to-past-memento.html>

# Outline

- What is a web archive?
- **Why are archives important?**
- What's my story?
- How can we help others tell their stories?
- Related WS-DL Projects

# The Web holds our stories

The screenshot shows a web browser window displaying a CNN World article. The browser's address bar shows the URL: [www.cnn.com/2011/WORLD/africa/02/01/egypt.protests.scene/index.html?iref=story...](http://www.cnn.com/2011/WORLD/africa/02/01/egypt.protests.scene/index.html?iref=story...). The page features the CNN World logo and a navigation menu with categories like Home, TV & Video, CNN Trends, U.S., World, Politics, Justice, Entertainment, Tech, Health, Living, Travel, Opinion, iReport, Money, and Sports. The main article is titled "In Tahrir Square, 'we talk today as Egyptians'" by Ivan Watson, dated February 1, 2011. It includes a large video player showing a crowd of protesters holding a large Egyptian flag. To the right of the article is an advertisement for an L.L.Bean jacket, titled "COMPLIMENTS OF MAINE". Below the main article is a section for "STORY HIGHLIGHTS" and a "Timeline of the conflict in Libya".

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## In Tahrir Square, 'we talk today as Egyptians'

By Ivan Watson, CNN  
February 1, 2011 9:47 a.m. EST

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Recommend 595 people recommend this. Be the first of your friends.

Click to play

**'Mubarak leaves...or we die here'**

**STORY HIGHLIGHTS**

- Crowds chant for Mubarak to leave
- Tahrir Square is the focal point of protests
- Opposition parties embrace the demonstration

**Editor's Note:** Follow the latest tweets from CNN correspondents from the protests. Send your video, images to CNN iReport.

**Cairo, Egypt (CNN)** – A record crowd in Cairo's Tahrir Square swelled Tuesday afternoon, a sea of Egyptians from every walk of life in a demonstration dubbed the "march of millions."

Tens of thousands prayed on their knees on the asphalt in unison under the sprawling city's winter sun, and then chanted "leave, leave" in a deafening roar to their president, Hosni Mubarak.

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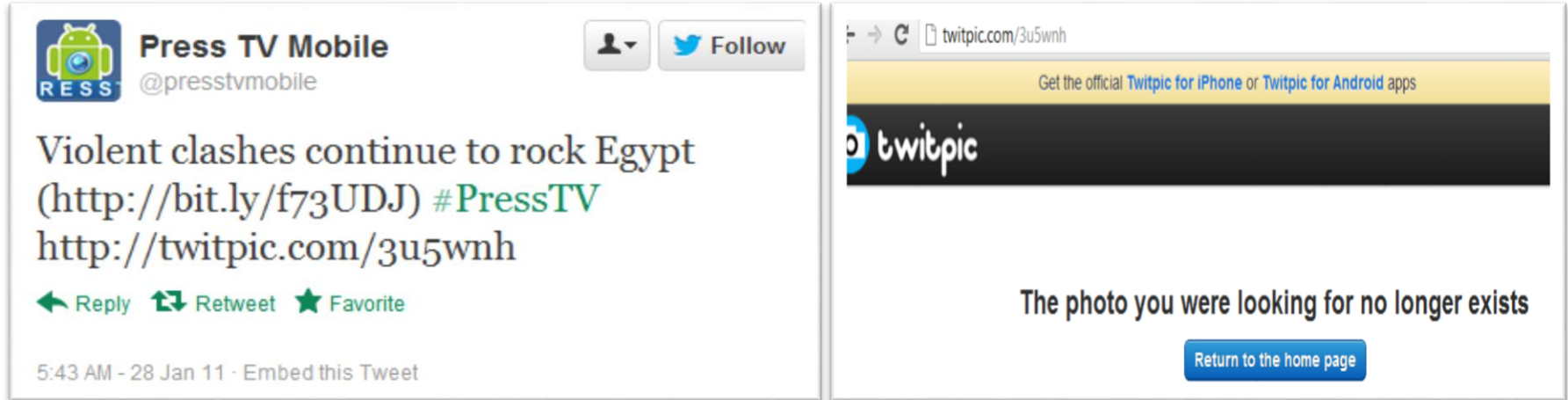
Part of complete coverage on  
**Unrest in the Arab World**

**'Sons of Mubarak' in plea for respect**  
Pro-Mubarak supporters believe Egypt's former president is innocent of charges of corruption and killing protesters.

**Timeline of the conflict in Libya**  
updated Wed August 24, 2011  
Fighting in Libya started with anti-government demonstrations in February and escalated into a nationwide civil war.



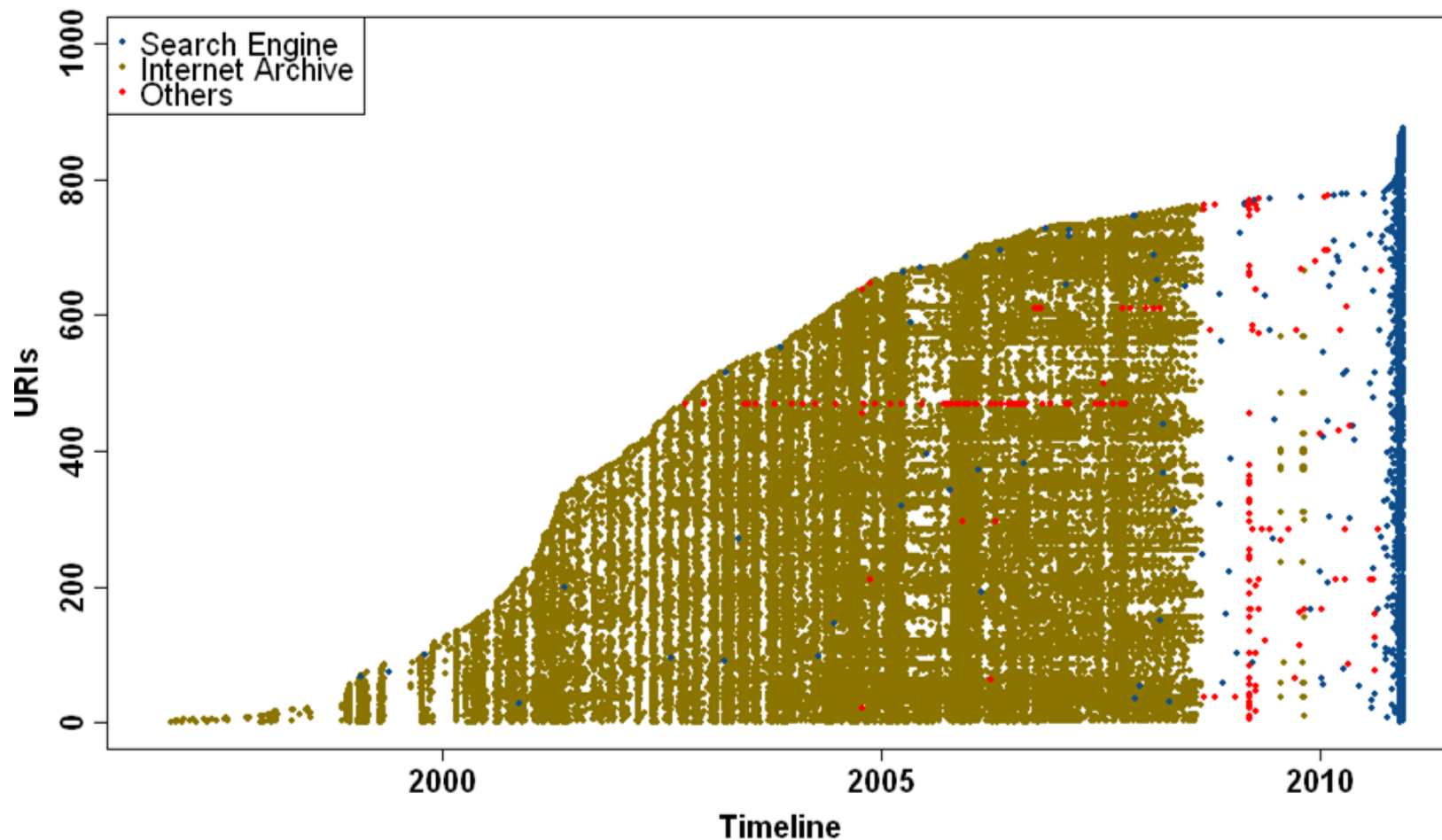
# But webpages can disappear



- Average lifespan of a webpage - 50-100 days
- A year after publication, about 11% of content shared on social media will be gone.

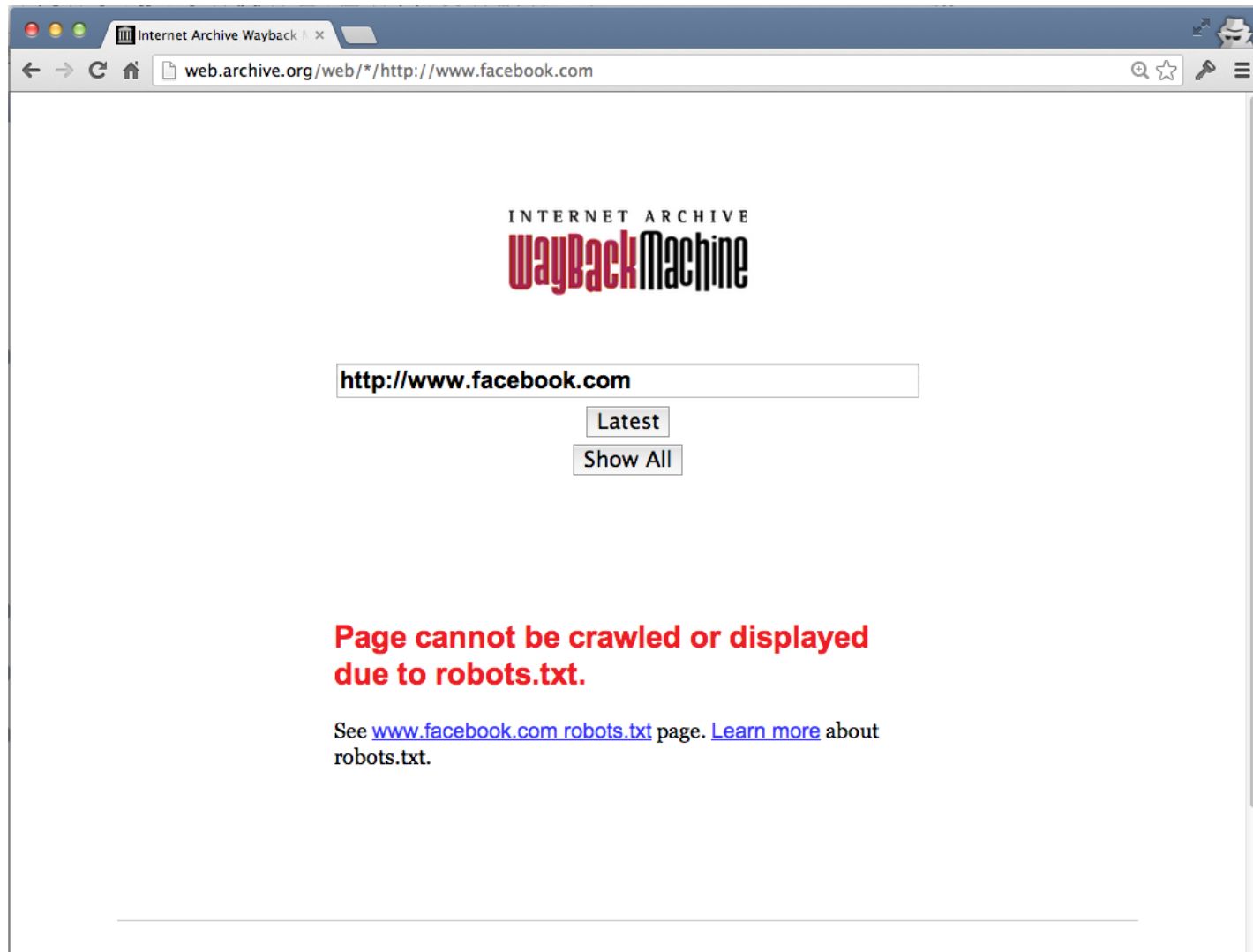
SalahEldeen and Nelson, "Losing My Revolution: How Many Resources Shared on Social Media Have Been Lost?", TPD 2012  
<http://ws-dl.blogspot.com/2012/02/2012-02-11-losing-my-revolution-year.html>

# But maybe it's archived



Ainsworth, AISum, SalahEldeen, Weigle, and Nelson, "How Much of the Web is Archived?", JCDL 2011  
<http://ws-dl.blogspot.com/2011/06/2011-06-23-how-much-of-web-is-archived.html>

# But social media is hard to archive



# Our Research Group Goals

- We believe that web archives are valuable cultural resources, and we want everyone to know about them.
- We want to make it easy for people to bridge the gap between the live web and the archives.
- We believe that replaying the past is more compelling than reading a summary.

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Hurricane Katrina - Special Repor...

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[CNN.com Home Page](#) - [U.S.](#) - [Weather](#) - [More CNN.com sections:](#)**Special Reports**CNN's coverage of Katrina and the aftermath won a [2006 Peabody Award](#), the oldest honor in electronic media.

# Hurricane Katrina

**HURRICANE KATRINA  
MAIN PAGE***Editor's Note: This special report was archived in September 2006.*

## Voices from the Gulf Coast

August 29, 2005: Hurricane Katrina made landfall on the Gulf Coast, destroying lives, leveling homes and leaving thousands of survivors with the same story: We lost everything. One year later, many still coped with Katrina's devastation. Some had moved forward, but for others recovery was at a standstill. CNN.com visited the region to get their stories.

### Rebuilding

- [Mardi Gras](#)
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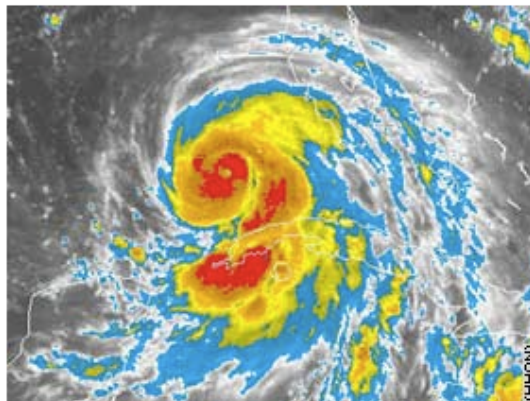
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Updated: 11:16 a.m. EDT (15:16 GMT), August 27, 2005

## Strengthening Katrina to hammer Gulf Coast



Blamed for at least seven deaths in Florida, powerful Hurricane Katrina is becoming stronger as it churns in the Gulf of Mexico. Forecasts say it's poised to deal a hammer blow to the Mississippi Gulf Coast and southeast Louisiana as a possible Category 4 storm early next week. Meanwhile, residents of southeast Florida are cleaning up after Katrina cut across the state packing strong winds and dumping heavy rain.

[FULL STORY](#)

• Watch: [Oil rig evacuates](#) | [Homes flooded](#)

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Updated: 11:07 p.m. EDT (03:07 GMT), August 27, 2005

## Katrina drives people away from Gulf Coast



People leaving New Orleans pack highways.

Tourists and New Orleans residents are leaving the city as Hurricane Katrina churns closer to Louisiana and Mississippi. Officials fear New Orleans is vulnerable because it sits an average of 6 feet below sea level. Katrina could be a category 4 when it makes landfall. "This is a very, very dangerous hurricane," says hurricane center Director Max Mayfield.

[FULL STORY](#)

• Watch: 'Very concerned' L 'Big Easy' prepares

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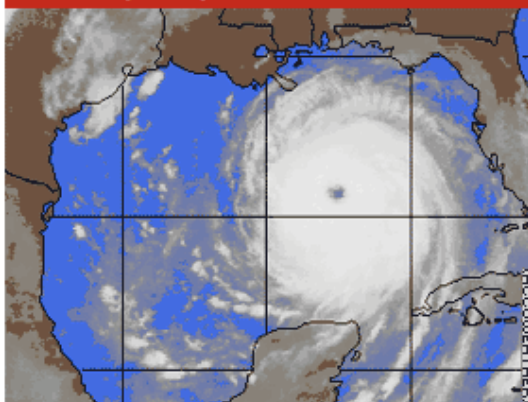
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Updated: 10:56 a.m. EDT (14:56 GMT), August 28, 2005

## New Orleans orders mandatory evacuation

### BREAKING NEWS



With powerful and strengthening Hurricane Katrina headed straight for his city, the mayor of New Orleans today ordered the mandatory evacuation of residents. The Category 5 storm has maximum sustained winds near 175 mph and has already been blamed for nine deaths in South Florida. Looking ahead, Max Mayfield of the National Hurricane Center said: "It has the potential for a large loss of life."

[DEVELOPING STORY](#)

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Updated: 7:58 p.m. EDT (23:58 GMT), August 29, 2005



## Killer Katrina heading inland

Residents in New Orleans struggle to keep above the rising flood waters.

## Killer Katrina heading inland

- Mississippi: Three dead, "unprecedented damage"
- More than 50 rescued from floods in New Orleans
- Katrina downgraded to tropical storm
- Parts of six Louisiana parishes "devastated"
- Oil rig breaks loose, hits Mobile River bridge
- "Life-threatening storm surge flooding" occurring

### DEVELOPING STORY

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Updated: 5:33 a.m. EDT (09:33 GMT), August 30, 2005

# 54 DEAD IN MISSISSIPPI


[Levee breached in New Orleans](#)

## Levee breached in New Orleans

- Estimated 50 dead in 1 Mississippi county, officials say
- Levee breach in New Orleans forces hospital evacuation
- 1.3 million without power
- Tens of thousands to be homeless for months
- American Red Cross launching its largest relief operation

### FULL STORY

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Residents struggle to keep above the rising flood waters.

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[A tour of the damage in New Orleans](#) (2:42)



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Updated: 1:44 p.m. EDT (17:44 GMT), August 30, 2005

# STATES OF DEVASTATION

This image is  
no longer available

Floodwaters from Hurricane Katrina cover a portion of New Orleans today.

## Death toll rising in Katrina's wake

- Impact: [Katrina's toll leaves Gulf Coast reeling](#) | [Watch](#)
- People: [Survivor describes harrowing experience](#) | [Watch](#)
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Updated: 6:14 a.m. EDT (10:14 GMT), August 31, 2005

# SLIPPING INTO CHAOS



A shotgun-toting New Orleans police officer has a word with a man on Canal Street.

## Unrest grows in New Orleans

- Water still rising in Crescent City, with no way out
- Looting, shootings reported
- New Orleans mayor blasts failure to patch levees
- Louisiana governor declares day of prayer
- Critical patients being airlifted, shelters being evacuated
- Paint marks indicate Mississippi homes with bodies

### FULL STORY

- Watch: [Chaotic aftermath](#) | [Tragedy, devastation](#)
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Updated: 3:44 p.m. EDT (19:44 GMT), August 31, 2005

# HEALTH EMERGENCY



Survivors on an apartment building roof try to get the attention of rescuers.

## Health fears as bodies lie in water

- Public health emergency declared; cholera, typhoid fears
- Katrina death toll so far estimated at least 120
- New Orleans mayor says toll in his city will be hundreds
- Superdome evacuees moving to Astrodome

### FULL STORY

- Watch: [Saved by a tree](#) | [Dome must be evacuated](#)
- Watch: [For Slidell, very bad bump in road](#)
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[Health risks post-Katrina](#)  
(2:18)



[Clinging to a tree](#) (3:25)



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Updated: 9:51 p.m. EDT (01:51 GMT), August 31, 2005

# GETTING OUT



Buses leave New Orleans with evacuees who had been holed up in the Superdome.

## Evacuation of survivors begins

- Public health emergency declared; cholera, typhoid fears
- First evacuee buses leave New Orleans
- Bush: "One of the worst national disasters"
- Extra 10,000 National Guard troops called up

### FULL STORY

- Watch: [Heartbreaking trip home](#) | [Searching for bodies](#)
- Watch: [How the levees broke](#) | [Saved by a tree](#)
- Special Report: [Trail of destruction](#) | [Gallery](#) | [Levee system](#)
- Citizen Journalist: [Your e-mails](#) | [Gallery](#) | [Share your story](#)
- Hotlines: [Where to get, give help](#) | [Tell people you're safe](#)

### MORE NEWS

[Most Popular](#) ▶

- [CNN exclusive: Police unable to aid sick woman](#)
- [Babies evacuated from ICU](#) | [Watch](#)
- [Public health threat looming](#) | [Watch](#)
- [Superdome evacuees head to Houston](#) | [Watch](#)
- [Huge sandbags planned for levee leaks](#) |

### WATCH FREE VIDEO

[Browse/Search](#)[Desperate pleas](#)  
(5:38)[Armed looting in New Orleans](#)  
(2:30)[Now In The News:](#) Your quick news update

Featured Video

More Video Picks

Requested Date: 1996

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Travel

Education

Special Reports

Video **NOW FREE**

▶ Autos with Edmunds.com

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Updated: 12:30 p.m. EDT (16:30 GMT), September 1, 2005

# DESPERATION AND DANGER



Storm victims are stuck without food or water at the New Orleans Convention Center.

## Boat rescues suspended

- Boat rescuers asked to stand down due to dangers
- Huge crowd spotted at New Orleans convention center
- Gunfire, looting, small fires disrupt Superdome evacuation
- Citizens holed up in high-rises throng to buses
- Major buildings "pancaking" in Mississippi

### DEVELOPING STORY

- **Watch:** ['Nobody in control'](#) | [Fires at Superdome](#)
- **Watch:** [Newborns rescued](#) | [Heartbreaking trip home](#)
- **Special Report:** [Trail of destruction](#) | [Gallery](#) | [Levee system](#)
- **Citizen Journalist:** [Your e-mails](#) | [Gallery](#) | [Share your story](#)
- **Hotlines:** [Where to get, give help](#) | [Tell people you're safe](#)

### MORE NEWS

[Most Popular](#) ▶

- [Bush tells victims: 'A lot of help coming'](#)
- [CNN/Money: Bush: 'Zero tolerance' on gouging](#)
- [Town wiped off the map by Katrina](#)
- [CNN exclusive: Police unable to aid sick woman](#)
- [Spain MP among stranded in New Orleans](#)
- [Federal rescue teams arriving](#)

### WATCH FREE VIDEO

[Browse/Search](#)

**FEMA suspends rescue operations**  
(2:34)



**Anger and outrage** (3:38)



[Now In The News \(11:48 a.m. ET\):](#) Your quick news update

[Featured Video](#)
[More Video Picks](#)



Requested Date: 1996

2010 06/21/2010

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THE WEB CNN.com

SEARCH

Updated: 12:29 a.m. EDT (04:29 GMT), September 3, 2005

# AID IN, PEOPLE OUT

This image is  
no longer available

## Some hope returns to New Orleans

- Food and medicine arrives for desperate survivors
- 40,000 patients airlifted from hospitals
- Bush sees destruction – and meets angry mayor
- But thousands still stranded in homes and centers

### [DEVELOPING STORY](#)

- **Watch:** [Fires and floods](#) | [Aid rolls in](#)
- **Watch:** [Bush: It seems dark right now](#) | [The military mission](#)
- **Special Report:** [Hurricane Katrina](#) | [Street-by-street](#)
- **Citizen Journalist:** [Your e-mails](#) | [Gallery](#) | [Share your story](#)
- **Hotlines:** [Where to get, give help](#) | [Tell people you're safe](#)
- **CNN TV:** [The struggle for New Orleans, on CNN](#)

Military personnel distribute food and water Friday at the convention center in New Orleans.

### MORE NEWS

[Most Popular](#) ▶

- [What was said vs. What was happening](#)
- [Exhausted evacuees pack airport](#) | [Watch](#)
- [On the Scene: Hopelessness in Mississippi](#)
- [Lt. Gen. Honore a 'John Wayne dude'](#) | [Watch](#)
- [Drying New Orleans could take months](#) | [Watch](#)
- [Bush admits relief efforts 'not enough'](#) | [Watch](#)

### WATCH FREE VIDEO

[Browse/Search](#)

[Role of race questioned](#)  
(2:14)



[Medical nightmare](#) (1:49)



[Now In The News:](#) Your quick news update

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Education

Special Reports

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RSS 

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Updated: 6:08 p.m. EDT (22:08 GMT), September 4, 2005

# HELICOPTER HEROES

## BREAKING NEWS



A U.S. Air Force rescuer is dropped onto a rooftop to help trapped Katrina victims.

## Rescuers going roof-to-roof

- AP: Army engineers say police shoot dead its contractors
- Helicopters dropping supplies, picking up survivors
- Convention center mostly evacuated
- Mayor: Police, firefighters traumatized

### DEVELOPING STORY

- Watch: [Coast Guard rescuers](#) | [Some refuse to leave](#)
- Watch: [Mississippi wipe out](#) | [Mayor: Officers traumatized](#)
- Hotlines: [How to get, give help](#) | [Tell people you're safe](#)
- Citizen Journalist: [Your e-mails](#) | [Gallery](#) | [Share your story](#)
- Special Report: [Timeline](#) | [New Orleans: Block by block](#)
- On CNN TV: [Dr. Phil on healing after Katrina, 9 p.m. ET](#)

## MORE NEWS

[Most Popular](#) ▶

- [Chief Justice Rehnquist dies at 80](#) | [Watch](#)
- [Manning brothers team up for relief](#) | [Watch](#)
- [New Orleans couple weds in Mississippi shelter](#)
- [Mobile hospital stopped by red tape](#)
- [Misery has company at Mississippi motels](#)
- [Evacuees anguished at leaving pets behind](#)

## WATCH FREE VIDEO

[Browse/Search](#)[Misery in Mississippi](#)

(2:16)

[Musical tribute to New Orleans](#)

(3:08)

[Now in The News \(5:52 p.m. ET\):](#) Your quick news update

Featured Video

More Video Picks

*Replaying the past can be  
more compelling than just a  
summary*

# Outline

- What is a web archive?
- Why are archives important?
- **What's my story?**
- How can we help others tell their stories?
- Related WS-DL Projects

# What's My Story?

- As another illustration, I'll tell you a little bit more about myself ...
- ... using the Internet Archive

# NLU - 1997

Northeast Louisiana University

web.archive.org/web/19970226195019/http://www.nlu.edu/

INTERNET ARCHIVE  
Wayback Machine

http://www.nlu.edu/ Go

347 captures  
26 Feb 97 - 12 May 13

JAN FEB JUN  
1996 1997 1998

Close X  
Help ?

## Northeast Louisiana University

welcome campus info

academics publications

enrollment alumni

athletics lagniappe

Welcome to the Northeast Louisiana University home page. Click on the graphic above, or the following links for more information.  
[Welcome to NLU](#), [academics](#), [enrollment](#), [athletics](#), [campus info](#), [publications](#), [alumni](#), [lagniappe](#), [publishing on NLU's web](#).

- [Greater NLU Annual Fund](#) - Realize the Vision
- 1997 "[Best Practices](#)" Institute - The Challenge of Educating Special Children
- An [Email Search](#) and the [NLU Gopher Server](#) are located under the *campus info* link.
- Click here for [NLU's Web Page Policy](#)

Welcome to Northeast Louisiana University. Email Search Now Available. Email Search can be found at the Campus Info Link.

# UNC-CS - 1997

Department of Computer Science, UNC-Chapel Hill


web.archive.org/web/19970628133751/http://www.cs.unc.edu/

INTERNET ARCHIVE  
WayBack Machine


1,132 captures  
29 Jan 97 - 23 Oct 13

JAN JUN AUG  
1996 1997 1998

Close X  
Help ?



The University of North Carolina at Chapel Hill  
College of Arts and Sciences



## Department of Computer Science

---

**People** Department Administration, Department Committees, Faculty, Staff, Graduate Students, Undergraduate Students, Visiting Researchers, Alumni, Friends, Phone and Photo directories

**Academic Affairs** Academic Programs, Course Descriptions, Schedules and Home Pages, Exams, Department Committees, Forms

**Research** Research Projects and Faculty Research Interests, Research Results and Products, Ph.D. Dissertations, Technical Reports, Research Laboratories, Research Support (Grants, Contracts, Gifts, and Awards), Research Resources

**News, Events, & Organizations** Current News and Events, Colloquia, Conferences, Distinguished Lecturer Series, Special Events, Computer Science Students Association, Research Groups, and Research Meetings

**Publications** Admissions Brochure, Alumni Newsletter (News & Notes), Department History, Ph.D. Dissertations, M.S. Theses, Technical Reports

**General** Descriptions of our Department, UNC Campus, Chapel Hill, and the Research Triangle Area, Directions to the Department, Floor Plans for

# My CS Homepage - 1997

Internet Archive  
Wayback Machine

http://www.cs.unc.edu/~clark/ Go

160 captures  
28 Jun 97 - 3 Oct 13

MAY JUN 28 JAN  
1996 1997 1998

Close X  
Help ?

## Michele Clark

CB# 3175 Sitterson Hall

University of North Carolina  
Chapel Hill, NC 27599-3175

### A bit about me:

I'm a MS/Ph.D. student in the [Department of Computer Science](#) at [UNC](#) in Chapel Hill. These are the research groups I'm involved in at UNC:

- [DiRT Group \(Distributed and Real-Time Systems\)](#)
- [nanoManipulator Project](#) (NEW this summer!)
- [Collaboration Group](#)
- [Collaboration Bus Project](#)

**NLU** I earned my BS in [computer science](#) at [Northeast Louisiana University](#) in Monroe, LA.

My hometown is St. Francisville, Louisiana, a beautiful small town on the banks of the mighty Mississippi, known for its antebellum plantation homes and centuries-old live oak trees.



# CS Student Assoc Pres - 1999

Michele Clark

web.archive.org/web/19990209084127/http://www.cs.unc.edu/~clark/

Internet Archive Wayback Machine

160 captures  
28 Jun 97 - 3 Oct 13

DEC FEB APR  
1998 1999 2000

Close X  
Help ?

**NLU**

**Michele Clark**

CB# 3175 Sitterson Hall  
University of North Carolina  
Chapel Hill, NC 27599-3175

[CSSA](#) President  
Office: 108 Sitterson Hall  
Phone: #1909 (office) or #1937 (DiRT lab)  
[Spring '99 Schedule](#)

**Academics**

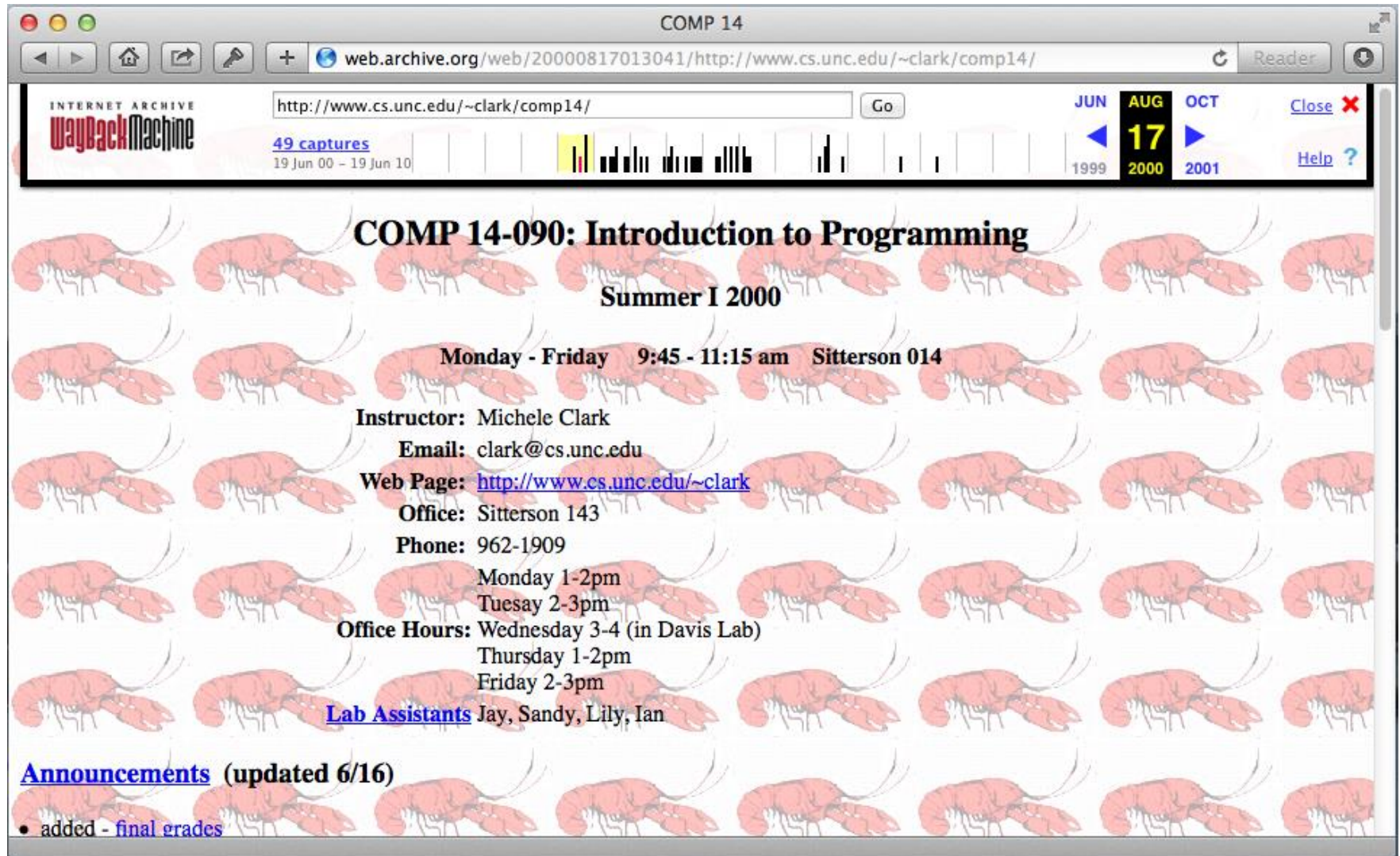
I'm a Ph.D. student in the [Department of Computer Science](#) at [UNC](#) in Chapel Hill, NC. I just received my MS in computer science from UNC in May 1998. I earned my BS from the [Department of Computer Science](#) at [Northeast Louisiana University](#) in Monroe, LA. While there, I was a member of NLU's [Honors Program](#).

**Current Courses (Fall 99):**

COMP 321	Technical Communication	<a href="#">Fred Brooks</a>
OR 183	Stochastic Models	V. Kulkarni

[Previous Courses at UNC](#) (Fall 96 - Fall 98)

# Teaching - 2000



COMP 14

web.archive.org/web/20000817013041/http://www.cs.unc.edu/~clark/comp14/

INTERNET ARCHIVE  
Wayback Machine

http://www.cs.unc.edu/~clark/comp14/ Go

49 captures  
19 Jun 00 - 19 Jun 10

JUN AUG OCT  
1999 2000 2001

Close X  
Help ?

## COMP 14-090: Introduction to Programming

### Summer I 2000

Monday - Friday 9:45 - 11:15 am Sitterson 014

**Instructor:** Michele Clark  
**Email:** [clark@cs.unc.edu](mailto:clark@cs.unc.edu)  
**Web Page:** <http://www.cs.unc.edu/~clark>  
**Office:** Sitterson 143  
**Phone:** 962-1909

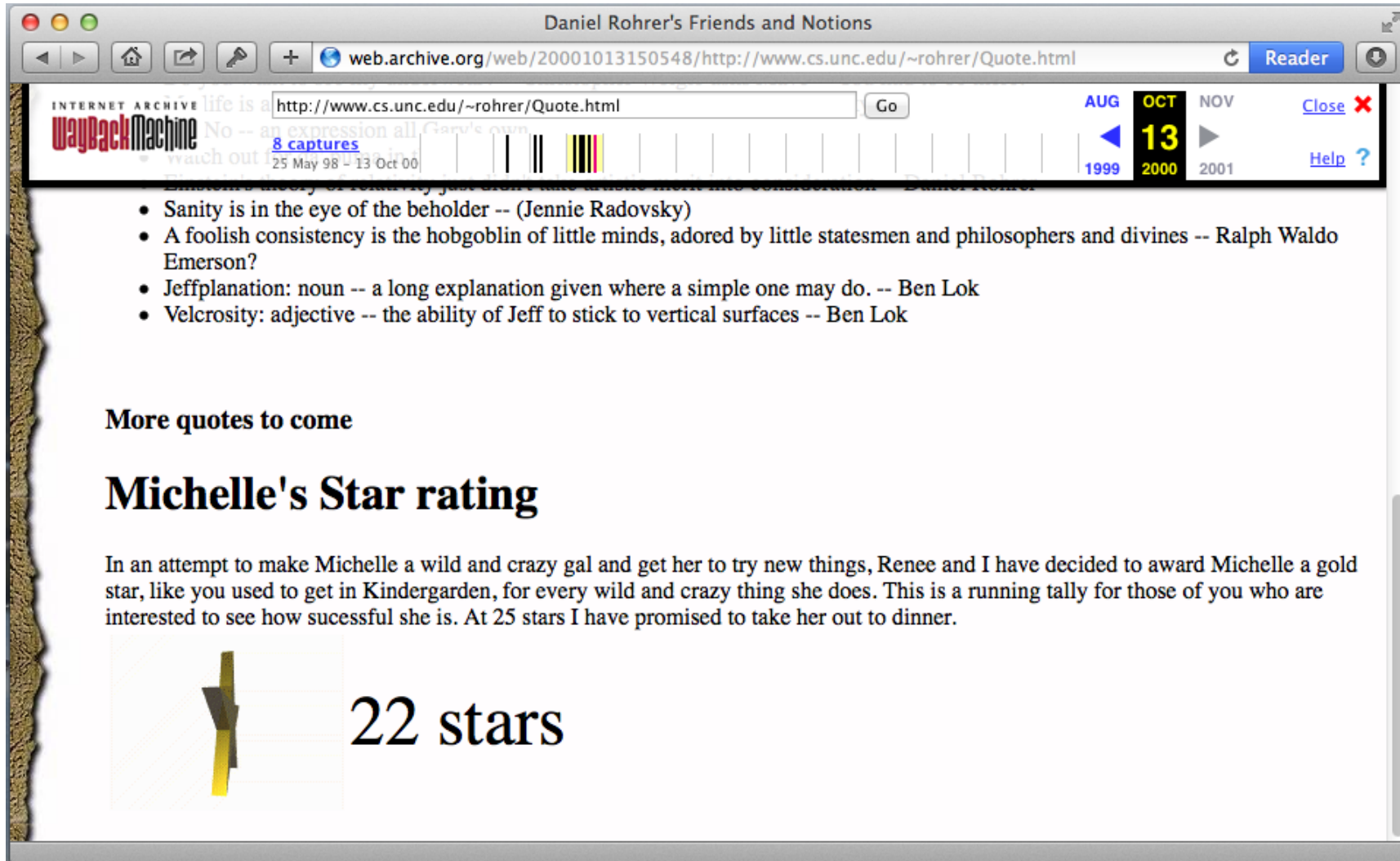
Monday 1-2pm  
Tuesday 2-3pm  
**Office Hours:** Wednesday 3-4 (in Davis Lab)  
Thursday 1-2pm  
Friday 2-3pm

**Lab Assistants** Jay, Sandy, Lily, Ian

**Announcements** (updated 6/16)

- added - [final grades](#)

# Finding gems in the archive



Internet Archive Wayback Machine

http://www.cs.unc.edu/~rohrer/Quote.html

Go

AUG OCT NOV

1999 2000 2001

Close X


Help ?

- Sanity is in the eye of the beholder -- (Jennie Radovsky)
- A foolish consistency is the hobgoblin of little minds, adored by little statesmen and philosophers and divines -- Ralph Waldo Emerson?
- Jeffplanation: noun -- a long explanation given where a simple one may do. -- Ben Lok
- Velcrosity: adjective -- the ability of Jeff to stick to vertical surfaces -- Ben Lok

**More quotes to come**

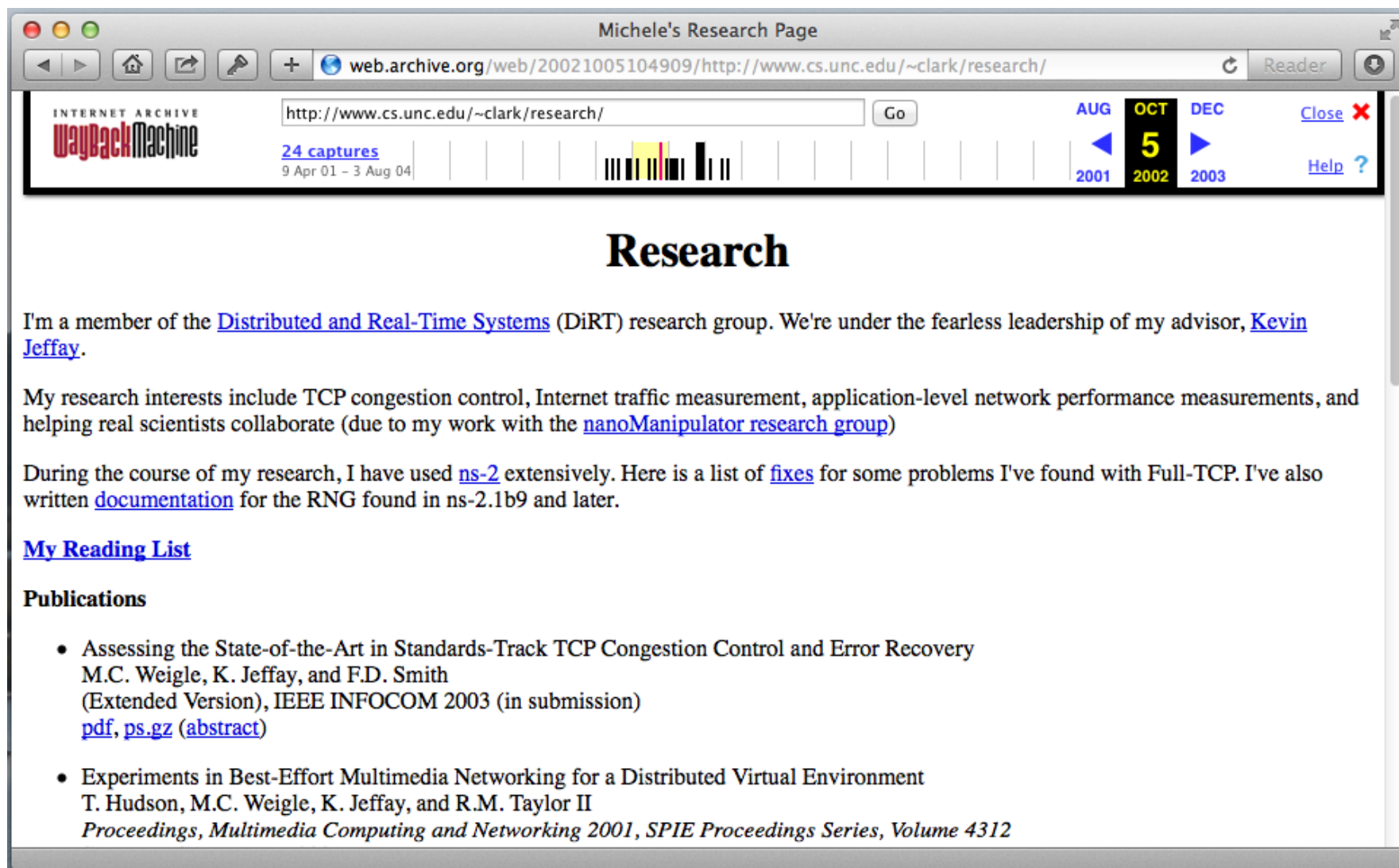
## Michelle's Star rating

In an attempt to make Michelle a wild and crazy gal and get her to try new things, Renee and I have decided to award Michelle a gold star, like you used to get in Kindergarten, for every wild and crazy thing she does. This is a running tally for those of you who are interested to see how successful she is. At 25 stars I have promised to take her out to dinner.



22 stars

# My Research - 2002



The screenshot shows a web browser window titled "Michele's Research Page" with the address bar containing the URL <http://www.cs.unc.edu/~clark/research/>. The Wayback Machine interface is visible, showing the date "OCT 5 2002" and "24 captures" from "9 Apr 01 - 3 Aug 04". The page content includes a title "Research" and several paragraphs of text, a "My Reading List" section, and a "Publications" section with two entries.

## Research

I'm a member of the [Distributed and Real-Time Systems](#) (DiRT) research group. We're under the fearless leadership of my advisor, [Kevin Jeffay](#).

My research interests include TCP congestion control, Internet traffic measurement, application-level network performance measurements, and helping real scientists collaborate (due to my work with the [nanoManipulator research group](#))

During the course of my research, I have used [ns-2](#) extensively. Here is a list of [fixes](#) for some problems I've found with Full-TCP. I've also written [documentation](#) for the RNG found in ns-2.1b9 and later.

### [My Reading List](#)

### Publications

- Assessing the State-of-the-Art in Standards-Track TCP Congestion Control and Error Recovery  
M.C. Weigle, K. Jeffay, and F.D. Smith  
(Extended Version), IEEE INFOCOM 2003 (in submission)  
[pdf](#), [ps.gz](#) ([abstract](#))
- Experiments in Best-Effort Multimedia Networking for a Distributed Virtual Environment  
T. Hudson, M.C. Weigle, K. Jeffay, and R.M. Taylor II  
*Proceedings, Multimedia Computing and Networking 2001, SPIE Proceedings Series, Volume 4312*

# Married, Graduated, and Teaching - 2003

Michele Clark Weigle

web.archive.org/web/20031008210628/http://cs.unc.edu/~clark/

INTERNET ARCHIVE  
Wayback Machine

http://cs.unc.edu/~clark/ Go

160 captures  
28 Jun 97 - 3 Oct 13

JUL 2002 OCT 2003 NOV 2004


8

Close X

Help ?

## Michele Clark Weigle

CB# 3175 Sitterson Hall  
[Department of Computer Science](#)  
[University of North Carolina](#)  
Chapel Hill, NC 27599-3175



Office: 317 Sitterson Hall  
Email: [mcweigle@cs.unc.edu](mailto:mcweigle@cs.unc.edu)  
Phone: 962-1909

### Research

- Interests: TCP congestion control, Internet traffic measurement
- [Publications](#)
- [Dissertation](#)

### Teaching

- COMP 14: Introduction to Programming ([Fall 2003](#), [Summer I 2000](#))

# Faculty Position at Clemson - 2004

Michele Clark Weigle

web.archive.org/web/20040829211424/http://www.cs.unc.edu/~clark/


INTERNET ARCHIVE  
**WayBackMachine**

http://www.cs.unc.edu/~clark/ Go

160 captures  
28 Jun 97 - 3 Oct 13

JUN 2003 AUG 29 2004 SEP 2005

Close X Help ?



## Michele Clark Weigle

I've recently moved into a faculty position at Clemson University. If you're looking for something that's no longer available here, try my Clemson webpage at <http://www.cs.clemson.edu/~mweigle>, or send me an email.

### Email

Email sent to *clark at cs.unc.edu* and *mcweigle at cs.unc.edu* will both be forwarded to my Clemson email account (*mweigle at cs.clemson.edu*)

### Dissertation

(includes examples of UNC's LaTeX style file and acceptable bibliography styles)

### Teaching @UNC

COMP 14: Introduction to Programming -- [Spring 2004](#), [Fall 2003](#), [Summer I 2000](#)

---

*Last modified: Tue Nov 05 2013 02:14:14 GMT-0500 (EST)*

# Clemson missing captures

Department of Computer Science

web.archive.org/web/20060506021819/http://www.cs.clemson.edu/

INTERNET ARCHIVE  
WayBackMachine

231 captures  
11 Dec 97 - 2 Nov 13

MAY 2001 MAY 2006 SEP 2008

6

Close X  
Help ?

## School of Computing

Computer Science  
Computational Arts  
Information Technology

CLEMSON UNIVERSITY

Prospective Students

Undergraduate Student Resources

Graduate Student Resources

Research

Faculty/Staff

University Links

WebMail

Help Desks

Contact Us

### Undergraduate Programs

B.A. in Computer Science  
B.S. in Computer Information Systems  
B.S. in Computer Science

### Research

### Student Organizations

ACM  
CSAAA  
UPE Honor Society  
C.S. Graduate Association

### Graduate Programs

MFA in Digital Production Arts  
M.S. in Computer Science  
Ph.D. in Computer Science

#### News and Current Announcements

- Department holds Honors and Awards [ceremony](#) to recognize outstanding students in Computer Science and Computer Information Systems.
- SENIOR EXIT INTERVIEWS: graduating seniors should schedule an exit interview with either [Dr. Weaver](#) or [Dr. Srimani](#).

#### Department Links

- Course [Schedules](#)
- CpSc 120 [Test Out](#) Option
- Jobs [List](#)
- Department [Organization](#)
- Accreditation [Document Repository](#)
- [Linux Users Group](#)

# Proof I was there - 2006

Computer Science Faculty, Clemson University

web.archive.org/web/20060427162818/http://www.cs.clemson.edu/People/faculty.shtml

INTERNET ARCHIVE  
Wayback Machine

http://www.cs.clemson.edu/People/faculty.shtml

9 captures  
27 Apr 06 - 26 Jan 10


MAR APR DEC  
2005 27 2006 2008

Close X  
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Professor Emeritus; Ph.D., Maryland.  
Computer science education.

- **James Wang** ([jzwang@cs.clemson.edu](mailto:jzwang@cs.clemson.edu))  
Assistant Professor; Ph.D., Central Florida.  
Multimedia, database systems, operating systems, distributed network computing and storage management.
- **Ken Weaver** ([weaver3@cs.clemson.edu](mailto:weaver3@cs.clemson.edu))  
Lecturer; Ph.D., Clemson.  
Student performance and pedagogies, student services technologies
- **Michele Weigle** ([mweigle@cs.clemson.edu](mailto:mweigle@cs.clemson.edu))  
Assistant Professor; Ph.D., North Carolina.  
Networks, Internet protocols, network simulations.
- **J. Mike Westall** ([westall@cs.clemson.edu](mailto:westall@cs.clemson.edu))  
Professor; Ph.D., North Carolina.  
Systems software, performance measurement and evaluation.

• • • • •



Last modified: November 5, 2013  
Department of Computer Science. © 2005 All rights reserved.  
Renovation, mistakes, and maintenance by the [Webmaster](#).



# Faculty Position at ODU - 2006

Department Of Computer Science

web.archive.org/web/20060830212634/http://www.cs.odu.edu/

INTERNET ARCHIVE  
WayBackMachine

730 captures  
2 Jan 97 - 18 Oct 13

JUL 2005 AUG 30 2006 OCT 2007

Close X  
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Old Dominion UNIVERSITY

A to Z Index | Directories Search ODU GO

College of Sciences

## COMPUTER SCIENCE

- Graduate**
  - Program Information
  - Course Information
- Undergraduate**
  - Program Information
  - Course Information
  - Advising Information
- Student Resources**
  - Admissions
  - Financial Aid
  - Summer Schedule & Books
  - Fall Schedule
  - Employment Opportunities
  - Calendars
  - Employee Information
- Directory**
  - Faculty
  - Staff
- Systems Group**
  - Systems Group FAQ



**Featured Faculty**

**Michele C. Weigle**

Ph.D. 2003  
University of North Carolina



**Featured Alum**

**Sanjay Khanna**

Ph.D. in CS  
Old Dominion



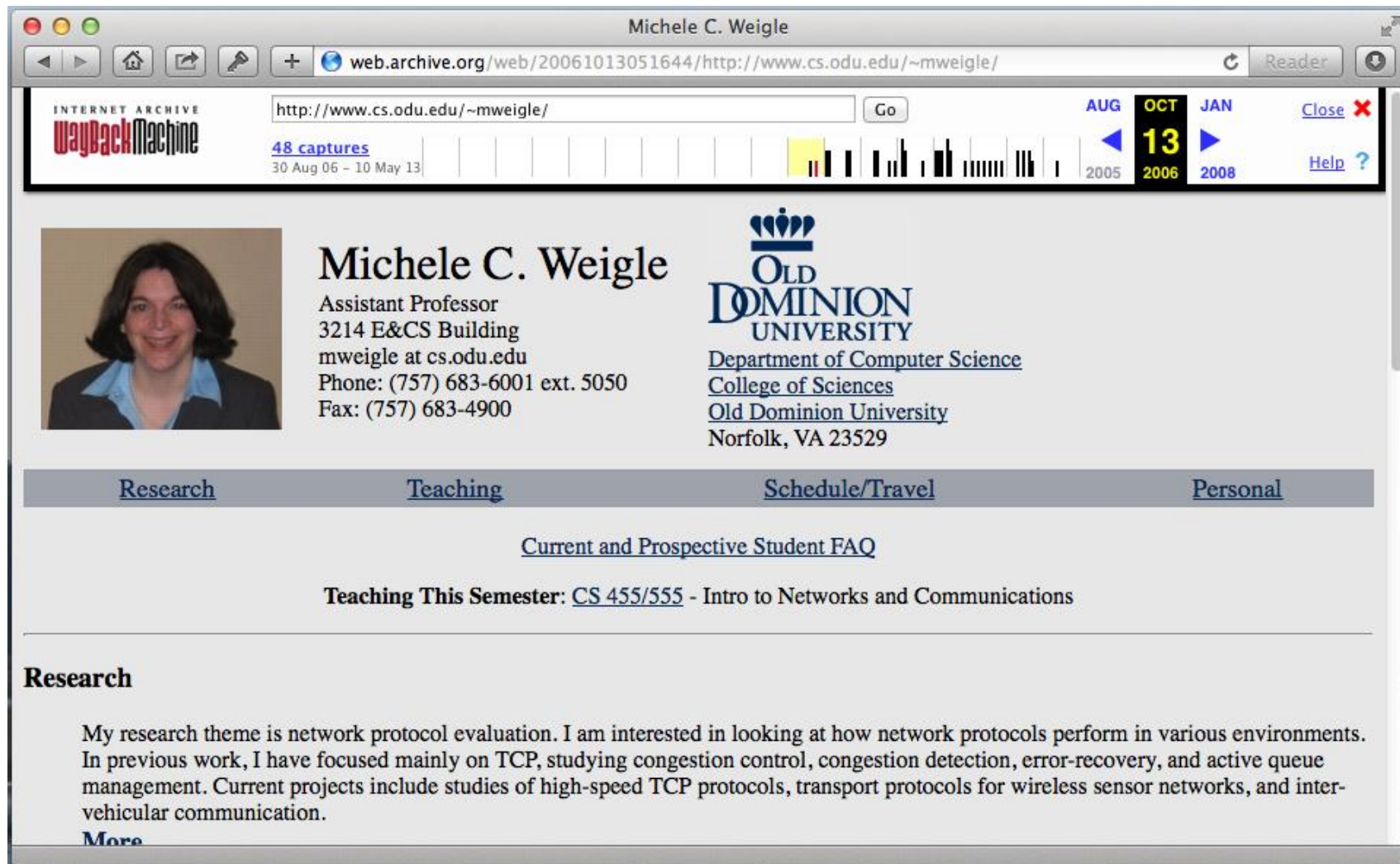
**Upcoming Events**

Fall 2006 Diagnostic Exam will be held on Saturday October 7

**About**

Welcome from the Chair  
Mission Statement

# Vehicular Networks - 2006




The screenshot shows a web browser window with the title "Michele C. Weigle". The address bar contains the URL "web.archive.org/web/20061013051644/http://www.cs.odu.edu/~mweigle/". The Wayback Machine interface is visible, showing the date "30 Aug 06 - 10 May 13" and a calendar for October 2006 with the 13th highlighted. The main content area features a portrait of Michele C. Weigle, her name, and contact information: Assistant Professor, 3214 E&CS Building, mweigle at cs.odu.edu, Phone: (757) 683-6001 ext. 5050, Fax: (757) 683-4900. The Old Dominion University logo and department information are also present: Department of Computer Science, College of Sciences, Old Dominion University, Norfolk, VA 23529. Navigation links include Research, Teaching, Schedule/Travel, and Personal. A link for "Current and Prospective Student FAQ" is also visible. Under the "Teaching This Semester" section, it lists "CS 455/555 - Intro to Networks and Communications". The "Research" section begins with the text: "My research theme is network protocol evaluation. I am interested in looking at how network protocols perform in various environments. In previous work, I have focused mainly on TCP, studying congestion control, congestion detection, error-recovery, and active queue management. Current projects include studies of high-speed TCP protocols, transport protocols for wireless sensor networks, and inter-vehicular communication." and ends with a "More" link.

Internet Archive  
Wayback Machine


http://www.cs.odu.edu/~mweigle/ Go

48 captures  
30 Aug 06 - 10 May 13

AUG OCT JAN  
2005 13 2006 2008  
Close X  
Help ?



**Michele C. Weigle**  
Assistant Professor  
3214 E&CS Building  
mweigle at cs.odu.edu  
Phone: (757) 683-6001 ext. 5050  
Fax: (757) 683-4900



**OLD DOMINION UNIVERSITY**  
[Department of Computer Science](#)  
[College of Sciences](#)  
[Old Dominion University](#)  
Norfolk, VA 23529

[Research](#)      [Teaching](#)      [Schedule/Travel](#)      [Personal](#)

[Current and Prospective Student FAQ](#)

**Teaching This Semester:** [CS 455/555](#) - Intro to Networks and Communications

---

**Research**

My research theme is network protocol evaluation. I am interested in looking at how network protocols perform in various environments. In previous work, I have focused mainly on TCP, studying congestion control, congestion detection, error-recovery, and active queue management. Current projects include studies of high-speed TCP protocols, transport protocols for wireless sensor networks, and inter-vehicular communication.

**More**

# 1<sup>st</sup> PhD Student Graduated - 2010

Home | Michele C. Weigle

web.archive.org/web/20100618103433/http://www.cs.odu.edu/~mweigle/

INTERNET ARCHIVE  
WayBackMachine

http://www.cs.odu.edu/~mweigle/ Go

48 captures  
30 Aug 06 - 10 May 13

MAY 2009 JUN 2010 NOV 2011

18

Close X Help ?



## Michele C. Weigle

Assistant Professor  
mweigle at cs.odu.edu  
3214 E&CS Building  
(757) 683-6001 ext. 5050  
(757) 683-4900 (fax)



4700 Elkhorn Ave, Suite 3300  
[Department of Computer Science](#)  
[Old Dominion University](#)  
Norfolk, VA 23529-0162

### Home

### Research

[Publications](#)  
[Projects](#)  
[Lab Notes](#)  
[Funding](#)  
[Students](#)  
[Research/Writing Links](#)  
[Working With Me](#)  
[CV](#) (pdf)

## Teaching - Fall 2010

- CS 312, Internet Concepts, TR 9:30-10:45 ([Fall 2009 webpage](#))
- CS 795/895, Vehicular Networks, R 3-5:30 ([Spr 2010 webpage](#))

## Research News

### Congratulations!

Congratulations to Gongjun Yan, who successfully defended his dissertation titled "Providing Location Security in Vehicular Ad Hoc Networks" on April 27.

# InfoVis, Work with WS-DL - 2011

Home | Michele C. Weigle

web.archive.org/web/20111121141049/http://www.cs.odu.edu/~mweigle/

INTERNET ARCHIVE  
WayBackMachine

http://www.cs.odu.edu/~mweigle/ Go

48 captures  
30 Aug 06 - 10 May 13

SEP NOV APR  
2010 21 2013

Close X  
Help ?

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**Research**  
[Publications](#)  
[iNetS](#)  
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[Funding](#)  
[Projects](#)  
[Students](#)  
[Working With Me](#)  
[Research Methods](#)  
[CV \(pdf\)](#)

**Teaching**  
[CS 312](#)  
[CS 795/895](#)  
Office Hours: MW 2-3pm,  
Tu 10-11am

[Schedule/Travel](#)

**Fall 2011 Teaching**

- [CS 312](#) - Internet Concepts - Tues/Thurs 3-4:15pm, Dragas 1117
- [CS 795/895](#) - Information Visualization - Thurs 9:30am-12:15pm, E&CS 2120

**Research News**

**iNetS Blog - Recent Posts**

- [ALERT Proposal Funded by NSF](#)
- [MobiSys 2011](#)
- [Congratulations, PhD Graduates!](#)

**WS-DL Blog - Recent Posts**

- [2011-11-17: 2011 NFL Season Week 11](#)
- [2011-11-10: 2011 NFL Season Week 10](#)
- [2011-11-10: Day in the Life of a Computer Scientist](#)

**Book**

- Stephan Olariu and Michele C. Weigle, Eds., [Vehicular Networks: From Theory to Practice](#), CRC Press / Taylor & Francis, 2009. ([BibTeX](#))

**Recent Papers**

- Scott Ainsworth, Ahmed AlSum, Hany SalahEldeen, Michele C. Weigle and Michael L. Nelson, "How Much of the Web Is Archived?" In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*. Ottawa, Canada, June 2011. ([PDF](#), [BibTeX](#))

# Telling My Story

- Going through the archive was a lot of fun.
- But, it wasn't always easy.
- Today, I might want to incorporate Facebook and Twitter posts in my story. Not saved at Internet Archive. =(
- Let's make this easy to do for everyone.

# Outline

- What is a web archive?
- Why are archives important?
- What's my story?
- **How can we help others tell their stories?**
- Related WS-DL Projects

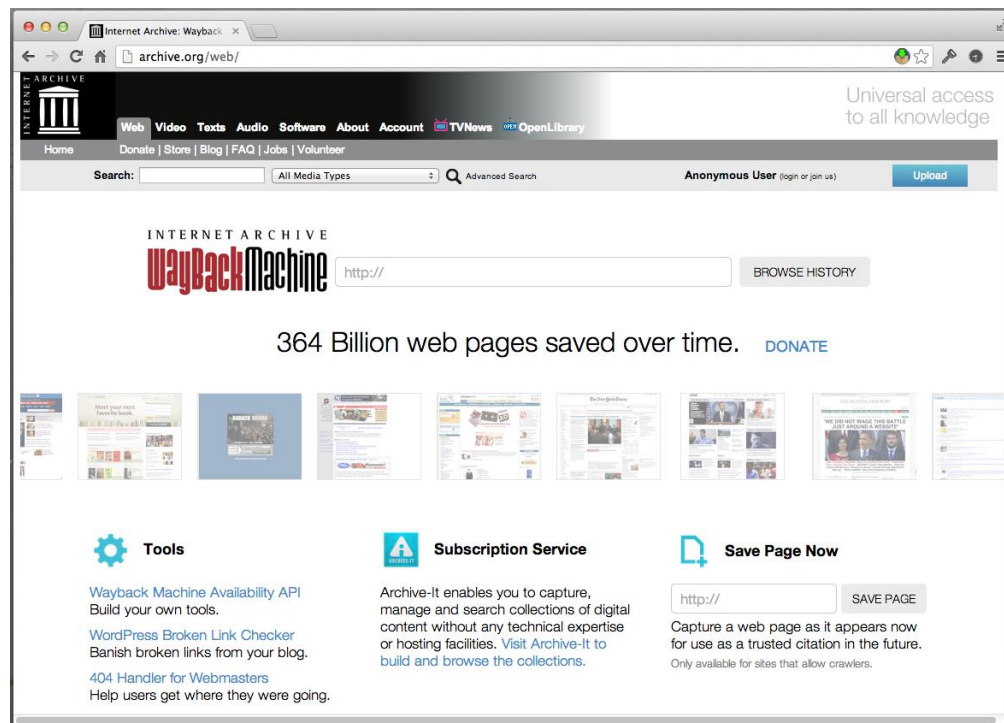
# Project Overview



- Project forms the PhD work of Yasmin AlNoamany, ideas in early stages
- Joins my interests in measurement, web science, information visualization.
  - *measurement* - how do people use web archives?
  - *web science* - how can we analyze web archives to find pages related to live web pages?
  - *info vis* - how can we present the stories that we have harvested from the archive?

# How do people use web archives?

- We obtained a year's worth (2012) of requests to the Internet Archive's Wayback Machine – client IPs anonymized





# How do people use web archives?

- First, there are a lot of robots (*aka* bots) who access the archive
  - 10 bot sessions for every 1 human session
  - maybe people don't know about the archive?
- Typical human sessions are pretty short
  - people aren't spending lots of time in the archive
  - it took me over an hour of walking through the archive to build my story
  - maybe people who do know about the archive aren't using it to build stories?

AlNoamany, Weigle, and Nelson, "Access Patterns for Robots and Humans in Web Archives", JCDL 2013

# How do people use web archives?

- 65% of the requested archived pages no longer exist on the live web
- People use the archive because the pages they are interested in no longer exist
  - like most of my examples from my story

AlNoamany, AlSum, Weigle, and Nelson, "Who and What Links to the Internet Archive", *IJDL*, to appear, 2013

# Helping Others Tell Stories

- How can we use this information to help people tell stories?
- How do people tell stories?
- What tools do they use today?

# Egyptian Revolution on Storify

The screenshot shows a Storify page titled "Egypt's Mubarak resigns - the world reacts" created by "nzherald" 2 years ago. The main text describes the resignation of Egyptian president Hosni Mubarak after 18 days of protests. The page includes a tweet from @TwidderingIdiot and a social media post from @adelshehadeh. A statistics table on the right shows 106 stories, 88 followers, and 7 following. A "Total views" table lists various sources and their view counts. The footer includes navigation links and copyright information for Storify.

Storify by nzherald 2 years ago

## Egypt's Mubarak resigns - the world reacts

After 18 days of violent protests in the country and increasing international pressure, Egyptian president Hosni Mubarak has shocked the world with an immediate resignation.

**nzherald**  
nzherald

Here to inform you with news and views from nzherald.co.nz via @TroyRF and the editorial team. Follow @nzheraldtv for the best news video.

+ Follow

106 STORIES    88 FOLLOWERS

7 FOLLOWING

Total views: 19,282

nzherald.co.nz	14,796
msn.nzherald.co.nz	3,280
m.nzherald.co.nz	768
storify.com	260
mobile.nzherald.co.nz	170
other	8

Related stories

- Boston Bomber Manhunt: Photos from Instagram  
BY PEOPLEMAG - 2 MONTHS AGO  
404,333 views
- Boston Marathon: Photos of the Manhunt  
BY PEOPLEMAG - 2 MONTHS AGO  
395,744 views

Like 43k    Follow @storify 98.9K followers

Plans Guided tour About Help Blog Jobs Tools API Terms Privacy © 2013 Storify

# Bookmarking is not preserving

The image shows two overlapping browser windows. The background window is a Storify page titled "Egypt's Mubarak resigns - the reacts" by nzherald, posted 2 years ago. The foreground window is a NZ Herald article page titled "The New Zealand Herald" with the URL [www.nzherald.co.nz/world/news/article.cfm?c\\_id=2&objectid=1](http://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=1). A red box highlights the error message "404 - Page not found" on the NZ Herald page, with a blue arrow pointing from the Storify page to it. Another red box highlights a tweet on the Storify page that says "0900am: Egypt's military had announced earlier that it had stepped in to 'safeguard' Egypt." Below the tweet is a progress bar for "Uninstalling dictator ... 99% complete" and a hashtag "#mubarak".

# How do people tell stories?

- There are three levels of information:
  - overview
  - recent events
  - story definition and replay

# Overview

egyptian revolution - Google

https://www.google.com/search?rlz=1C1GPCK\_en\_US395&q=egyptian+revolution+&oq=egyptian+revolution+&gs\_l=serp.3.0i10.10473.10473.0.10697.1. Q ☆ ☰

+You Search Images Maps Play YouTube News Gmail Drive Calendar More -

Google

Web Images Maps Shopping News More Search tools

About 45,700,000 results (0.13 seconds)


**2011 Egyptian revolution - Wikipedia, the free encyclopedia**  
[https://en.wikipedia.org/wiki/2011\\_Egyptian\\_revolution](https://en.wikipedia.org/wiki/2011_Egyptian_revolution)  
The **Egyptian Revolution** of 2011 (Arabic: ثورة 25 يناير thawret 25 yanāyir, Revolution of 25 January) took place following a popular uprising that began on 25 ...  
Timeline of the 2011 Egyptian ... - Domestic responses - International reactions

**Egyptian Revolution - Wikipedia, the free encyclopedia**  
[en.wikipedia.org/wiki/Egyptian\\_Revolution](en.wikipedia.org/wiki/Egyptian_Revolution)  
**Egyptian Revolution** may refer to: The Urabi Revolt; The **Egyptian Revolution** of 1919; The **Egyptian Revolution** of 1952; The 2011 **Egyptian revolution** ...

**Category: Egyptian revolutions - Wikipedia, the free encyclopedia**  
[en.wikipedia.org/wiki/Category:Egyptian\\_revolutions](en.wikipedia.org/wiki/Category:Egyptian_revolutions)  
Pages in category "**Egyptian revolutions**". The following 5 pages are in this category, out of 5 total. This list may not reflect recent changes (learn more).

**Egypt News — Revolution and Aftermath - The New York Times**  
<topics.nytimes.com/top/news/international/.../egypt/index.html>  
World news about **Egypt** and the **revolution** of 2011. Breaking news and archival information about its people, politics and economy from The New York Times.

**News for egyptian revolution**

 [Protests to give new turn to Egypt revolution](#)  
Reuters - 3 hours ago  
CAIRO (Reuters) - Does **Egypt** face a new **revolution**? Millions hope so, it seems; they have signed a national petition demanding the president ...  
The Star Onl...

[Egypt's Morsi severs ties with Syria, warns of 'counter-revolution violence'](#)  
Ahram Online - 1 day ago

[The Nile: Egypt must start a blue revolution \(1\)](#)  
Egyptian Gazette - 1 day ago

# Overview

A screenshot of a Google search page. The search bar contains the text "egyptian revolution". Below the search bar, there are tabs for "Web", "Images", "Maps", "Shopping", "News", and "More". The search results show "About 45,700,000 results (0.13 seconds)". The first result is highlighted with a red box and is titled "2011 Egyptian revolution - Wikipedia, the free encyclopedia". A blue arrow points from this result to the Wikipedia page shown in the next screenshot.

**2011 Egyptian revolution - Wikipedia, the free encyclopedia**  
[https://en.wikipedia.org/wiki/2011\\_Egyptian\\_revolution](https://en.wikipedia.org/wiki/2011_Egyptian_revolution)  
The **Egyptian Revolution** of 2011 (Arabic: ثورة 25 يناير *thawret 25 yanāyir*, Revolution of 25 January) took place following a popular uprising that began on 25 ...  
Timeline of the 2011 Egyptian ... - Domestic responses - International reactions

**Egyptian Revolution - Wikipedia, the free encyclopedia**  
[en.wikipedia.org/wiki/Egyptian\\_Revolution](en.wikipedia.org/wiki/Egyptian_Revolution)  
Egyptian Revolution may refer to: The Urabi Revolt; The Egyptian Revolution of 1919; The Egyptian Revolution of 1952; The 2011 Egyptian revolution ...

**Category: Egyptian revolutions - Wikipedia, the free encyclopedia**  
[en.wikipedia.org/wiki/Category:Egyptian\\_revolutions](en.wikipedia.org/wiki/Category:Egyptian_revolutions)  
Pages in category "Egyptian revolutions". The following 5 pages are in this category, out of 5 total. This list may not reflect recent changes (learn more).

**Egypt News — Revolution and Aftermath - The New York Times**  
<topics.nytimes.com/top/news/international/.../egypt/index.html>  
World news about **Egypt** and the **revolution** of 2011. Breaking news and archival information about its people, politics and economy from The New York Times.

## News for egyptian revolution



**Protests to give new turn to Egypt revolution**

Reuters - 3 hours ago

CAIRO (Reuters) - Does **Egypt** face a new **revolution**? Millions hope so, it seems; they have signed a national petition demanding the president ...

The Star Onl...

**Egypt's Morsi severs ties with Syria, warns of 'counter-revolution violence'**

Ahram Online - 1 day ago

**The Nile: Egypt must start a blue revolution (1)**

Egyptian Gazette - 1 day ago

A screenshot of the Wikipedia article for "2011 Egyptian revolution". The article title is "2011 Egyptian revolution" and it is part of the "Arab Spring". The article text describes the revolution as a popular uprising that began on 25 January 2011, leading to the overthrow of Egyptian President Hosni Mubarak. It mentions that there were 846 people killed and 6,000 injured. The article also notes that protesters burned upwards of 90 police stations and that international media and politicians attempted to minimize the aspect of the revolt. The article is part of the "Arab Spring" and is located in Cairo, Alexandria, and other cities in Egypt.



# Recent Events

A screenshot of a Google search for "egyptian revolution". The search results page shows approximately 45,700,000 results. The top results include:

- 2011 Egyptian revolution - Wikipedia, the free encyclopedia**: [https://en.wikipedia.org/wiki/2011\\_Egyptian\\_revolution](https://en.wikipedia.org/wiki/2011_Egyptian_revolution). The Egyptian Revolution of 2011 (Arabic: ثورة 25 يناير thawret 25 yanāyir, Revolution of 25 January) took place following a popular uprising that began on 25 ...  
Timeline of the 2011 Egyptian ... - Domestic responses - International reactions
- Egyptian Revolution - Wikipedia, the free encyclopedia**: [en.wikipedia.org/wiki/Egyptian\\_Revolution](en.wikipedia.org/wiki/Egyptian_Revolution). Egyptian Revolution may refer to: The Urabi Revolt; The Egyptian Revolution of 1919; The Egyptian Revolution of 1952; The 2011 Egyptian revolution ...
- Category: Egyptian revolutions - Wikipedia, the free encyclopedia**: [en.wikipedia.org/wiki/Category:Egyptian\\_revolutions](en.wikipedia.org/wiki/Category:Egyptian_revolutions). Pages in category "Egyptian revolutions". The following 5 pages are in this category, out of 5 total. This list may not reflect recent changes (learn more).
- Egypt News — Revolution and Aftermath - The New York Times**: <topics.nytimes.com/top/news/international/.../egypt/index.html>. World news about Egypt and the revolution of 2011. Breaking news and archival information about its people, politics and economy from The New York Times.

A red box highlights a news snippet titled "News for egyptian revolution" with a sub-headline "Protests to give new turn to Egypt revolution". The snippet includes a small image of a man and text from Reuters: "CAIRO (Reuters) - Does Egypt face a new revolution? Millions hope so, it seems; they have signed a national petition demanding the president ...". Below this, other news items are listed, such as "Egypt's Morsi severs ties with Syria, warns of counter-revolution violence" and "The Nile: Egypt must start a blue revolution (1)".

# Recent Events

egyptian revolution - Google

https://www.google.com/search?rlz=1C1GPCK\_en\_US395&q=egyptian+revolut

+You Search Images Maps Play YouTube News Gmail Drive Calendar

Google egyptian revolution

Web Images Maps Shopping News More Search tools

About 45,700,000 results (0.13 seconds)


**2011 Egyptian revolution - Wikipedia, the free encyclopedia**  
[https://en.wikipedia.org/wiki/2011\\_Egyptian\\_revolution](https://en.wikipedia.org/wiki/2011_Egyptian_revolution)  
The **Egyptian Revolution** of 2011 (Arabic: ثورة 25 يناير thawret 25 yanāyir, Revolution 25 January) took place following a popular uprising that began on 25 ...  
Timeline of the 2011 Egyptian ... - Domestic responses - International reactions

**Egyptian Revolution - Wikipedia, the free encyclopedia**  
[en.wikipedia.org/wiki/Egyptian\\_Revolution](en.wikipedia.org/wiki/Egyptian_Revolution)  
Egyptian Revolution may refer to: The Urabi Revolt; The Egyptian Revolution of 1919; The Egyptian Revolution of 1952; The 2011 Egyptian revolution ...

**Category: Egyptian revolutions - Wikipedia, the free encyclopedia**  
[en.wikipedia.org/wiki/Category:Egyptian\\_revolutions](en.wikipedia.org/wiki/Category:Egyptian_revolutions)  
Pages in category "Egyptian revolutions". The following 5 pages are in this category, out of 5 total. This list may not reflect recent changes (learn more).

**Egypt News — Revolution and Aftermath - The New York Times**  
<topics.nytimes.com/top/news/international/.../egypt/index.html>  
World news about **Egypt** and the **revolution** of 2011. Breaking news and archival information about its people, politics and economy from The New York Times.

**News for egyptian revolution**



**Protests to give new turn to Egypt revolution**  
Reuters - 3 hours ago  
CAIRO (Reuters) - Does **Egypt** face a new **revolution**? Millions hope so, it seems; they have signed a national petition demanding the president ...  
The Star Onl...

**Egypt's Morsi severs ties with Syria, warns of counter-revolution violence.**  
Ahrum Online - 1 day ago

**The Nile: Egypt must start a blue revolution (1)**  
Egyptian Gazette - 1 day ago

Protests to give new turn to Egypt revolution

www.reuters.com/article/2013/06/17/us-egypt-protests-idUSBRE95G0FB20130617

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ARTICLE COMMENTS (4) SLIDESHOW

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Full Focus

Protests to give new turn to Egypt revolution

Recommend 199 people recommend this. Be the first of your friends.



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Share 4

Share this

4

Email

Print

Related News

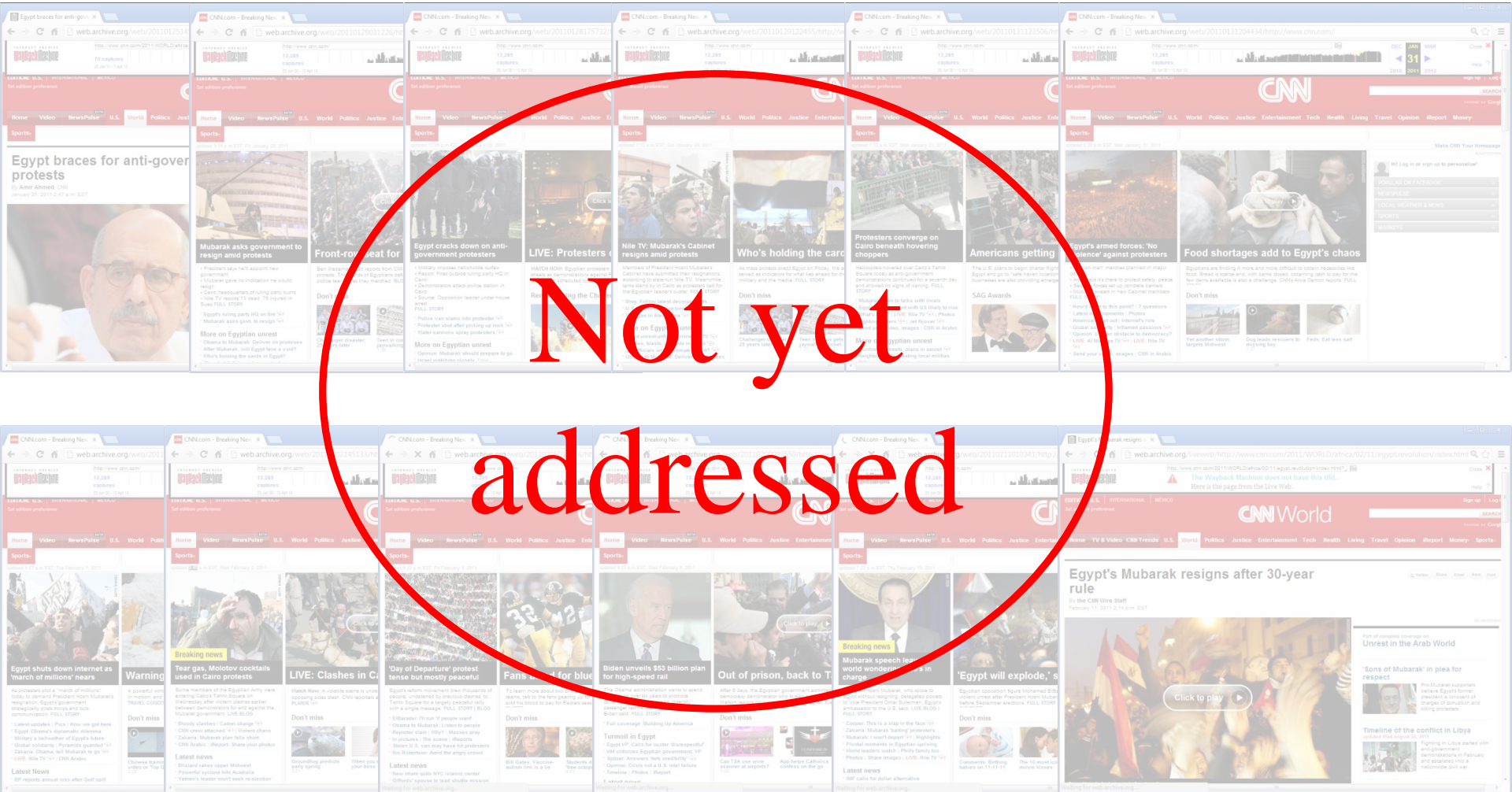
Login or register Latest from My Wire

# Story Replay

This row of screenshots captures the initial stages of the Egyptian Revolution. The first screenshot shows a headline: "Egypt braces for anti-gover protests" by Amir Ahmed, dated January 25, 2011. Subsequent screenshots show "Mubarak asks government to resign amid protests" and "Egypt cracks down on anti-government protesters". Other visible headlines include "Front-row seat for...", "LIVE: Protesters...", "Nile TV: Mubarak's Cabinet resigns amid protests", "Who's holding the cards...", "Protesters converge on Cairo beneath hovering choppers", "Americans getting...", "Egypt's armed forces: 'No violence' against protesters", and "Food shortages add to Egypt's chaos".

This row of screenshots shows the continuation and culmination of the Egyptian Revolution. The first screenshot shows "Egypt shuts down internet as march of millions'". Other headlines include "Warning", "LIVE: Clashes in Ca...", "Day of Departure' protest tense but mostly peaceful", "Fans bleed for blue", "Biden unveils \$63 billion plan for high-speed rail", "Out of prison, back to T...", "Breaking news: Mubarak speech leaves world wondering who's in charge", and "Egypt will explode...". The final screenshot in the row shows the headline: "Egypt's Mubarak resigns after 30-year rule" by the CNN Wire Staff, dated February 11, 2011.

# Story Replay



# Research Questions

*How do we*

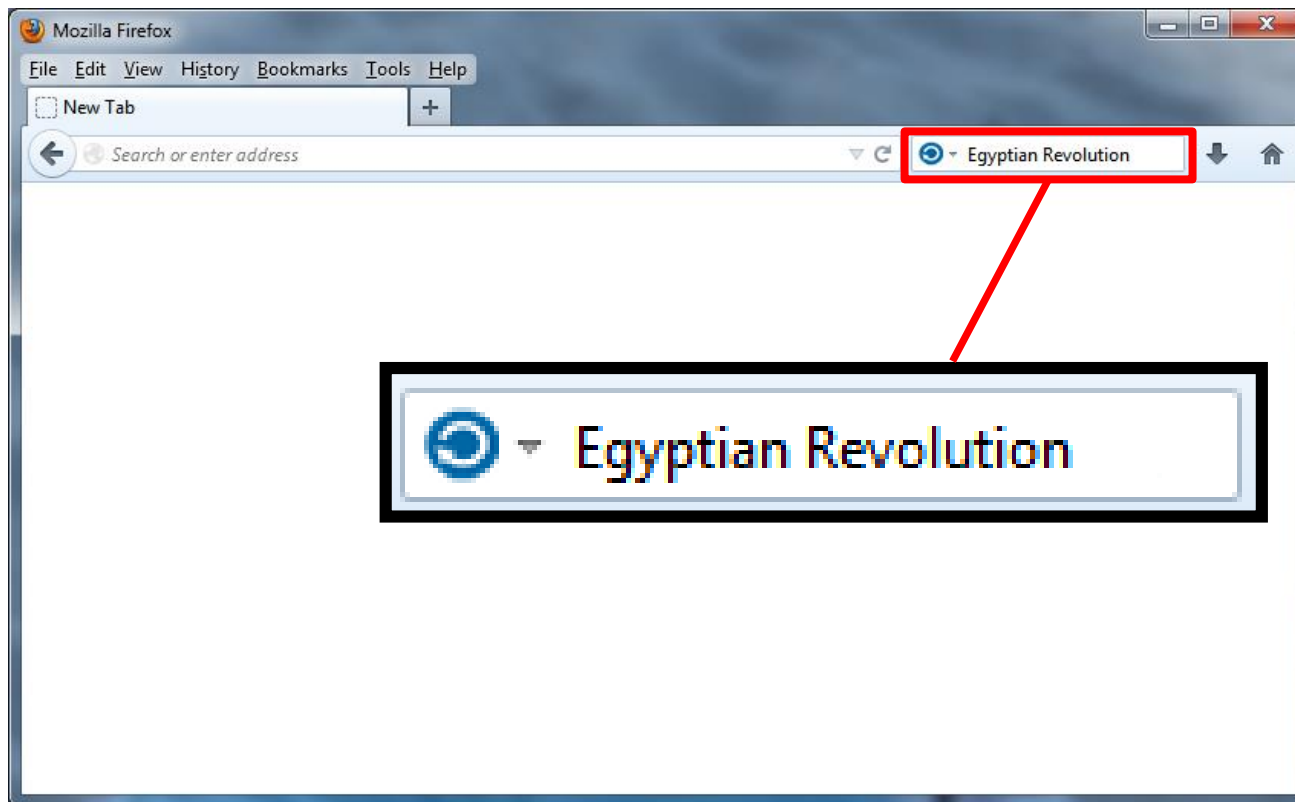
- define the time frame of a story?
- define the individual events that make up a story?
- identify, evaluate, and select candidate archived web pages to support the events of the story?
- visualize the resulting story?

# Define the Time Frame of a Story

- People remember the name of the story, but not the date
  - Hurricane Katrina - [REDACTED]
  - 2011 Egyptian Revolution - [REDACTED]
  - Boston Marathon Bombing - [REDACTED]
- Some stories have no definitive beginning/ending
  - BP Gulf Oil Spill - April 20 - September? 2010 - *effects, court cases still ongoing*
  - Egyptian Revolution - *which one? (1952, 2011, 2013)*

# Define the Time Frame of a Story

- Propose candidate times based on user query



# Define a Story's Events

- Consult hand-crafted timelines
- User-provided timelines
- Detect themes in relevant archived web pages



The screenshot shows a web browser window displaying the Wikipedia article titled "Timeline of the 2011 Egyptian revolution under Hosni Mubarak's rule". The URL in the address bar is "en.wikipedia.org/wiki/Timeline\_of\_the\_2011\_Egyptian\_revolution\_under\_Hosni\_Mubarak%27s\_rule". The article content includes a summary of major events from 1981 to 2011, starting with Hosni Mubarak's presidency and the 2011 Egyptian revolution. A table of contents is visible at the bottom of the article, listing dates and events such as "1 January 2011", "1.1 25 January – Day of Anger", "1.2 26 January", "1.3 27 January", "1.4 28 January – Friday of Anger", "1.4.1 Deployment of the army", "1.5 29 January", "1.6 30 January", "1.7 31 January", "2 February 2011", and "2.1 1 February – March of the Millions".



# Identify Relevant Archived Web Pages

- Identify "seed URIs" and query the archive for their existence during the appropriate time
  - also query for URIs linked from the seed URIs
- How to identify seed URIs?
  - wikipedia
  - news sites
  - social media (tweets, Facebook shares)
  - Storify

# Different sources will provide different seed URIs


**Storify** Search Storify

## Egyptian Revolution "The beginning of the story"

Everything happens for a reason. For the history, the revolution started with hope for change (ElBaradei), police brutality, and Tunisian revolution!!!

**Mohamed ElBaradei (19 February 2010)**

[Mohamed ElBaradei's Egypt Return](#) (Feb. 2010): Supporters Welcome Him, Hope For Mubarak Challenge



ElBaradei - Egypt-2011


Share

NAZZELHA · 2 YEARS AGO

ElBaradei's last stand: ElBaradei's return to Egypt could offer the opportunity for a good alternative to the current leadership. <http://www.aljazeera.com/indepth/features/2011/01/201112712333152f>

**Khaled Saeed (6 June 2010)**

Khaled Saeed was beaten and tortured to death, by Egyptian police. <http://globalvoicesonline.org/2010/06/10/egypt-khaled-said-an-emergency-murder-by-an-emergency-law/>



**We are all Khaled Said**

Khaled Said, a 28-year-old Egyptian from the coastal city of Alexandria, Egypt, was tortured to...

Share

FACEBOOK

egyptian revolution - Google

<https://www.google.com/search?q=egyptian+revolution&biw=985&bih=602&sa>

Search **egyptian revolution**

Web Images Maps Shopping Books More Search tools

Jan 1, 2011 - Feb 28, 2011 Sorted by relevance All results Clear

[Egypt Revolution 2011: A Complete Guide To The Unrest](#)  
www.huffingtonpost.com/2011/.../egypt-revolution-2011\_n\_816026.ht...  
Jan 31, 2011 - Having trouble digesting the **Egypt revolution**? Not sure about the latest events and why they matter?

[Egypt's Revolution in Photos - The Picture Show - NPR](#)  
www.npr.org/blogs/pictureshow/2011/02/11/.../egypt-revolution-in-photos  
Feb 11, 2011 - After weeks of protest, millions of Egyptians celebrate the country's first transition of power in 30 years.

[Egyptian Revolution Photos January 2011 | Public Intelligence](#)  
publicintelligence.net/egyptian-revolution-photos-january-2011/  
Jan 31, 2011 - **Egyptian Revolution Photos** January 2011, January 30, 2011 in Headline. These photos are from the last several days, beginning approximately January 28, ...

[Egypt: A New Turning Point for the Revolution? - In Focus - The Atlantic](#)  
www.theatlantic.com/infocus/2011/02/egypt-a-revolution/100007/  
Feb 10, 2011 - Events in the most populous country in the Middle East are once again in rapid flux, with massive demonstrations developing and rumors of Mubarak's imminent ...

[Pictures of Egyptian Revolution 25th January, 2011 - YouTube](#)  
www.youtube.com/watch?v=0kp6fEDdx18  
Jan 30, 2011 - Uploaded by mnuosssix  
Violent clashes between police and demonstrators as over ten thousand gather on the streets of Cairo. The ...

[Muslim world celebrates Egyptian revolution - in pictures | World news](#)  
www.guardian.co.uk/World/news/Egypt  
Feb 12, 2011 - Reaction from across the Muslim world to the resignation of the Egyptian president, Hosni Mubarak.

[Archived-Articles: The Story of the Egyptian Revolution](#)  
www.americanthinker.com/2011/.../the\_story\_of\_the\_egyptian\_revo.ht...  
Feb 2, 2011 - My apologies for the length of this article, but I see it as extremely important to tell the whole story as it happened. The Story of the Egyptian Revolution.

**Gooooooooooooooogle** >

1 2 3 4 5 6 7 8 9 10 Next

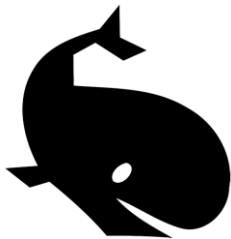
Previous 3 4 5 6 7 8 9 10 11 12 Next

# What about social media pages?

The image shows a screenshot of a Facebook page for 'We are all Khaled Said'. The browser address bar shows the URL <https://www.facebook.com/elshaheed.co.uk>. The page features a large profile picture of a man's face. A notification box says 'We are all Khaled Said is on Facebook. To connect with We are all Khaled Said, sign up for Facebook today.' with 'Sign Up' and 'Log In' buttons. Below the profile picture, the page name 'We are all Khaled Said' is displayed with 337,237 likes and 2,194 people talking about it. The 'About' section states: 'Society/Culture Website. This page does NOT represent Khaled Said's family and is NOT run by Wael Ghonim. It has been created and always been run by other administrators.' Navigation tabs include 'Photos', 'Likes' (337k), 'Notes 16', and 'Events'. A 'Highlights' dropdown menu is visible. The main feed shows a post from 15 hours ago: 'We are all Khaled Said shared a link. Video showing #Egypt #Police beating a Mansoura University Student who was participating in an anti military coup protest. http://www.youtube.com/watch?v=oLE6TXSPaEY'. A 'Likes' section shows a user named 'كلنا خالد سعيد' (Public Figure) who liked the page yesterday.

# Create your own Facebook archive

- May need to allow for user-contributed content



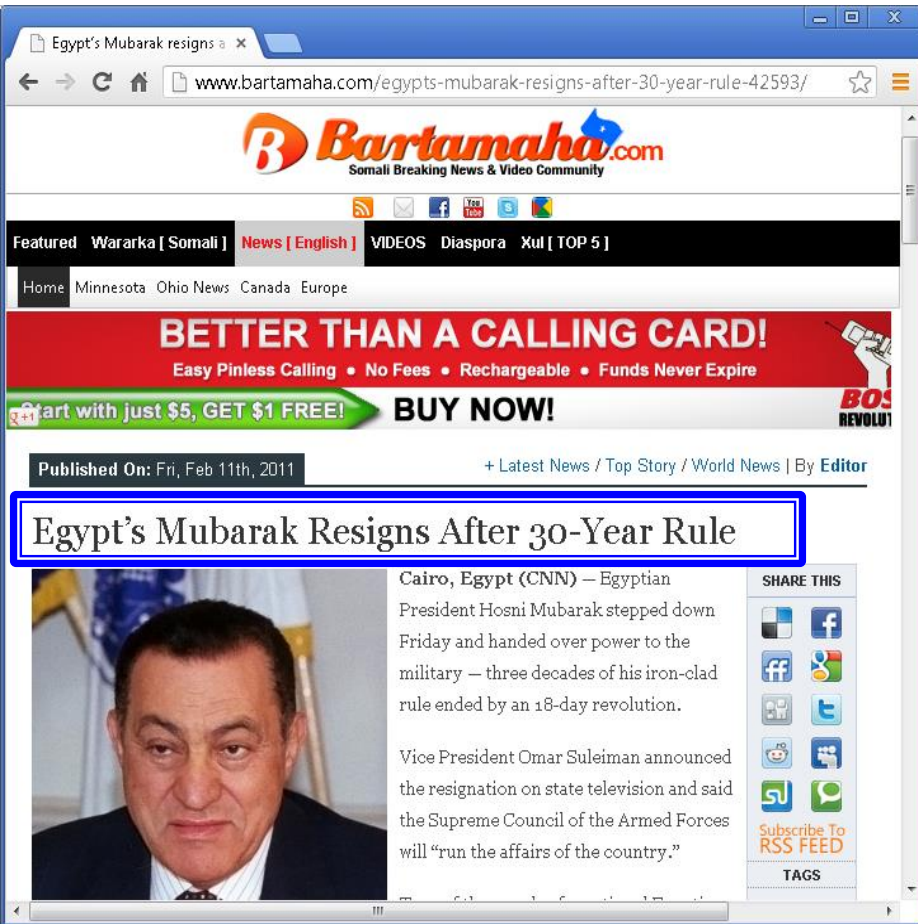
Kelly, Nelson, and Weigle, "WARCreate and WAIL: WARC, Wayback, and Heritrix Made Easy," Demo at Digital Preservation 2013.  
<http://ws-dl.blogspot.com/2013/07/2013-07-10-warcreate-and-wail-warc.html>



# Evaluate Relevant Archived Web Pages

- Are there duplicate accounts?
- What is the reputation, bias, or point of view of the source?
- How well was the page archived?

# Duplication



www.bartamaha.com/egypts-mubarak-resigns-after-30-year-rule-42593/

**Bartamaha.com**  
Somali Breaking News & Video Community

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Easy Pinless Calling • No Fees • Rechargeable • Funds Never Expire

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Published On: Fri, Feb 11th, 2011 + Latest News / Top Story / World News | By Editor

## Egypt's Mubarak Resigns After 30-Year Rule



Cairo, Egypt (CNN) — Egyptian President Hosni Mubarak stepped down Friday and handed over power to the military — three decades of his iron-clad rule ended by an 18-day revolution.

Vice President Omar Suleiman announced the resignation on state television and said the Supreme Council of the Armed Forces will “run the affairs of the country.”

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www.cnn.com/2011/WORLD/africa/02/11/egypt.revolution/index.html

EDITION: U.S. INTERNATIONAL MÉXICO

Set edition preference

**CNN World**

Home TV & Video CNN Trends U.S. World Politics Justice Entertainment Tech Health Living Tr

## Egypt's Mubarak resigns after 30-year rule

By the CNN Wire Staff  
February 11, 2011 2:14 p.m. EST



Click to play

# Reputation of Source

The screenshot shows a browser window with the address bar containing the URL: `web.archive.org/web/20110215202830/http://www.uscatholic.org/blog/2011/02/mubarak-step`. The page header features the U.S. Catholic logo and navigation links for Home, Blogs, News, Survey, Articles, Donate, and Subscribe. The main content area displays the article title "Mubarak steps down in Egypt!" with a sub-header "Friday, February 11, 2011" and author "By Megan Sweas". The article text begins with "Two weeks after protests began in Egypt, Hosni Mubarak has finally stepped down. CNN is livestreaming the celebrations in Cairo." and continues with "Also check out this beautiful picture of Muslim Egyptians praying." and "The question of what will happen with the country next, who will take leadership, and if the protesters demands are actually met, remains to be seen, but now is a time for celebration in Egypt. (For more on the future, and the need for true democracy in Muslim world, listen to this interview with our May interviewee, Akbar Ahmed.)" and "Agenzia Fides has been in touch with a missionary in Egypt, who said that he's seen 'the best of Egypt' in the protests. 'As a missionary community we ask ourselves what this means for us, how to be prophetic and how we can live out the Gospel Beatitudes in this context. Thus we have decided to witness to the desire for justice and freedom of this people,' Father Luciano Verdoscia says in this article, predicting the large numbers at today's protests."

The screenshot shows a browser window with the address bar containing the URL: `web.archive.org/web/20130317182111/http://www.cnn.com/2011/02/11/egypt.revolution/index.html`. The page header features the CNN World logo and navigation links for Home, TV & Video, CNN Trends, U.S., World, Politics, Justice, Entertainment, Tech, Health, Living, and Travel. The main content area displays the article title "Egypt's Mubarak resigns after 30-year rule" with a sub-header "By the CNN Wire Staff" and "February 11, 2011 2:14 p.m. EST". Below the text is a large video player showing a crowd of people celebrating with Egyptian flags. A "Click to play" button is overlaid on the video. The video player includes a "Part of Unro" sidebar on the right with "Son resp" and "Time update" sections.



# Quality of Archived Page

Egypt: ABC News' Christia x

wayback.archive-it.org/2358/20110204123721/http://abcnews.go.com

**abc NEWS / International**

HOT TOPICS: Charlie Sheen - Tahrir Square - Royal Wedding

Home Video News Politics Investigative Health Entertainment Money Tech World News Night

MORE NEWS: Egypt | Super Bowl | Nelson Mandela | Cuomo on the Case | Stocks | Weather | Sports from ESPN.c

Watch Live Day of Departure' Protesters Gather in Cairo

Watch Video →  **WATCH: Hosni Mubarak Exclusive**  **WATCH: Caught on Tape: Cops Kicking Teen** 

Home > International

## Mubarak: 'If I Resign Today There Will Be Chaos'

In an Exclusive Interview, Egypt's President Says He's Fed Up and Wants to Resign, "But Cannot for Fear of the Country Falling into Chaos."

REPORTER'S NOTEBOOK  
BY CHRISTIANE AMANPOUR  
Feb. 3, 2011

231 COMMENTS

I've just left the presidential palace in Cairo where I sat down for an exclusive 30-minute interview with President Hosni Mubarak.



He told me that he is troubled by the violence we have seen in Tahrir Square over the last few days but that his government is not responsible for it. Instead, he blamed the Muslim Brotherhood, a banned political party here in Egypt.

I asked President Mubarak about the violence that his supporters launched against the anti-government protesters in

Mubarak: 'If I resign there' x

web.archive.org/web/20120103031909/http://www.thenational.ae/r

INTERNET ARCHIVE Wayback Machine

1 captures 3 Jan 12 - 3 Jan 12

DEC 3 2011 2012

## The National

News Business Sport Lifestyle Arts & Culture Opinion

News » World » Middle East

### Mubarak: 'If I resign there will be chaos'

Chris Stanton and Hugh Naylor (Foreign Correspondent)

Feb 4, 2011

**NEWS Summary**

New PM Ahmed Shafiq urges demonstrators to go home, but no signs of protesters dispersing, despite government concessions including promise that Mubarak's son will not seek presidency.

Share this article:     

Save this article

**Related Coverage**

Amid Cairo's chaos, mosque becomes clinic for Tahrir Square injured



Opposition supporters shelter behind a barricade during clashes with pro-Mubarak demonstrators in Tahrir Square in Cairo yesterday.

GORAN TOMASEVIC/REUTERS

CAIRO // The Egyptian president, Hosni Mubarak, said last night in an interview with America's ABC television that he wants to leave office, but fears there will be chaos if he resigns now.

Fines for unsanitary conditions in shops

# Select Relevant Archived Web Pages

- User will select pages to use in the final story
- But user needs to be presented with some choices



# Visualize the Story

- Provide different interactive visualizations that enable exploring the story easily
- Provide the user with the ability to modify the story and specify the start and end dates

# Using Storify

The screenshot shows a web browser window displaying a Storify page. The browser's address bar shows the URL `storify.com/yasmina_anwar/egyptian-revolution`. The Storify interface includes a search bar, a 'Create Story' button, and a 'Login' link. The main content area features four news stories, each with a thumbnail image, a title, and a brief description. The stories are:

- Mohamed ElBaradei's Egypt Return: Supporters Welcome Him, Hope For Mubarak Challenge**  
CAIRO - Hundreds of supporters greeted former U.N. nuclear chief Mohamed ElBaradei at the airport upon return to his native Egypt on Frid...
- Global Voices in English ~ Egypt: Khaled Said - An Emergency Murder by An Emergency Law**  
Khaled Said, a 28-year-old Egyptian from the coastal city of Alexandria, was allegedly tortured to death at the hands of two officers who...
- "We Are All Khaled Said": Will the Revolution Come to Egypt?**  
Khaled Said, a small businessman in the historic Egyptian city of Alexandria, was dragged from an Internet café by police and beaten to d...
- Egypt braces for anti-government protests**  
(CNN) -- Egypt's security agencies are bracing themselves for anti-government protests Tuesday, with thousands expected to demonstrate ag...

At the bottom of the page, there are social media interaction buttons: 'Like 45k', 'Follow @storify 102K followers', and a footer with links for 'Plans', 'Guided tour', 'About', 'Help', 'Blog', 'Jobs', 'Tools', 'API', 'Terms', 'Privacy', and '© 2013 Storify'. A red 'feedback' button is visible on the right side of the page.

# Interactive Timeline

Mozilla Firefox

File Edit View History Bookmarks Tools Help

Replaying Story of Egyptian Revolution +

www.cs.odu.edu/~yasmin/explore Egyptian Revolution

Timeline Flipbook List Map View in Dipity Search

CNN

Egypt braces for anti-government protest  
Jan 25, 2011

Egypt's armed forces: 'No violence' ag...  
Jan 31, 2011

Protesters, tanks in standoff  
Feb 5, 2011

Egypt's Mubarak resigns after 30-year ...  
Feb 11, 2011

Obama to Mubarak: Deliver on vows  
Jan 28, 2011

Egypt shuts down internet as 'march of ...  
Feb 1, 2011

Men at the barricades: We won't quit  
Feb 7, 2011

Mubarak asks government to resign amid  
Jan 28, 2011

Clashes in Cairo  
Feb 2, 2011

Out of prison, back to Tahrir Square  
Feb 8, 2011

Will Egypt follow Tunisia's lead?  
Jan 25, 2011

Without police, Cairo 'like Wild West'  
Jan 29, 2011

Military steps in between Mubarak toes, ...  
Feb 3, 2011

Mubarak speech leaves world wondering  
Feb 10, 2011

Americans getting out of Egypt  
Jan 31, 2011

'Day of Departure' protest tense but m...  
Feb 4, 2011

Powered by: dipity

24 25 26 27 28 29 30 31 Feb 2 3 4 5 6 7 8 9 10 11 12 13 14

# Slideshow

Mozilla Firefox

File Edit View History Bookmarks Tools Help

Replaying Story of Egyptian Revolution

www.cs.odu.edu/~yasmin/explore

Egyptian Revolution

Timeline Flipbook List Map

View in Dity Search

Obama to Mubarak: Deliver on vcws  
Jan 28, 2011

Mubarak asks government to resign amid protests  
Jan 28, 2011

Cairo 'like Wild West'  
Jan 29, 2011

Breaking news  
Mubarak asks government to resign amid protests

- President says he'll support new government
- Mubarak vows to abdicate the world's largest oil reserve
- Cairo's 13th day of partying ends
- 100 TV reports 13 dead, 70 injured in Sudan Feb. 2007

Obama to Mubarak: Deliver on vows

President Obama spoke with Egypt's president moments after Mubarak addressed his nation, telling him that he must make good on promises and lead a cabinet reshuffle for the sake of his people in the days ahead.

Remembering the Challenger

FORJAS ON FACEBOOK

Powered by dity

# Research Questions

*How do we*

- define the time frame of a story?
- define the individual events that make up a story?
- identify, evaluate, and select candidate archived web pages to support the events of the story?
- visualize the resulting story?



# Outline

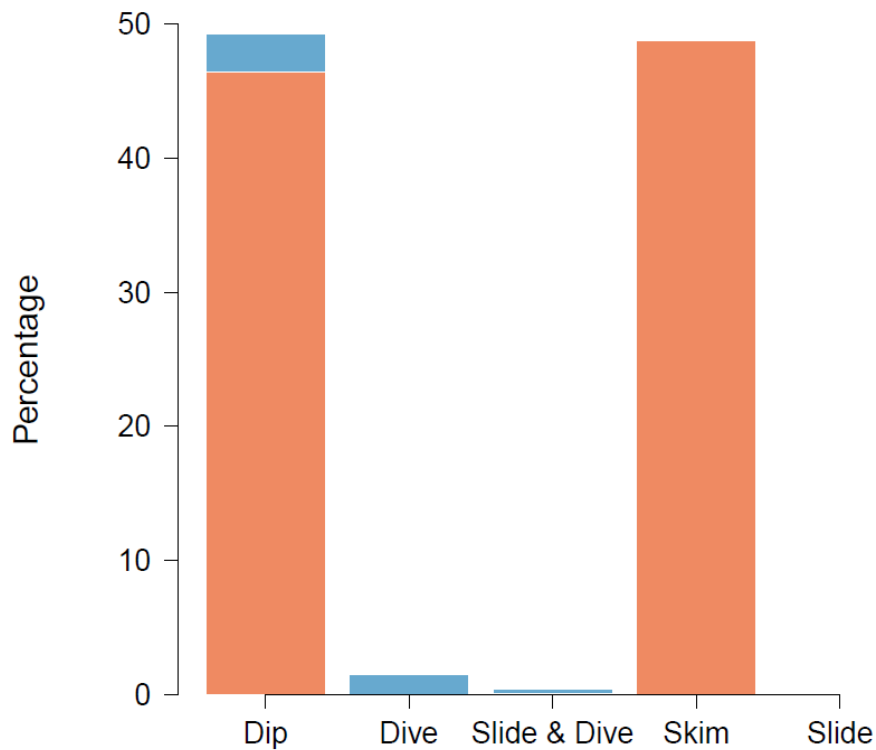
- What is a web archive?
- Why are archives important?
- What's my story?
- How can we help others tell their stories?
- **Related WS-DL Projects**

# User Access Patterns

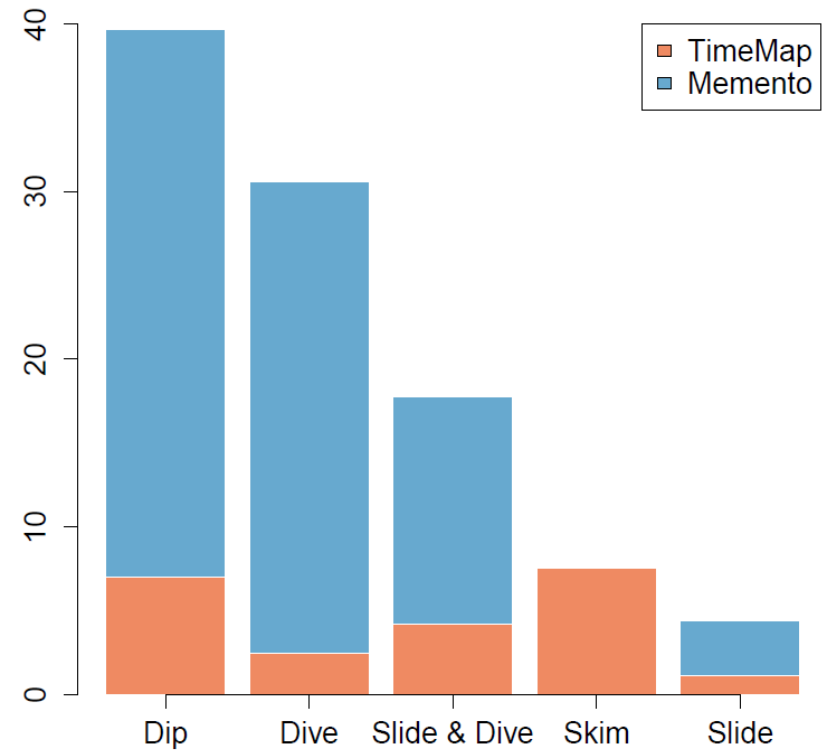


AlNoamany, Weigle, and Nelson, "Access Patterns for Robots and Humans in Web Archives", JCDL 2013

# Everybody Dips, Humans Dive, Robots Skim



**Robots (34,203 sessions)**



**Humans (3,431 sessions)**

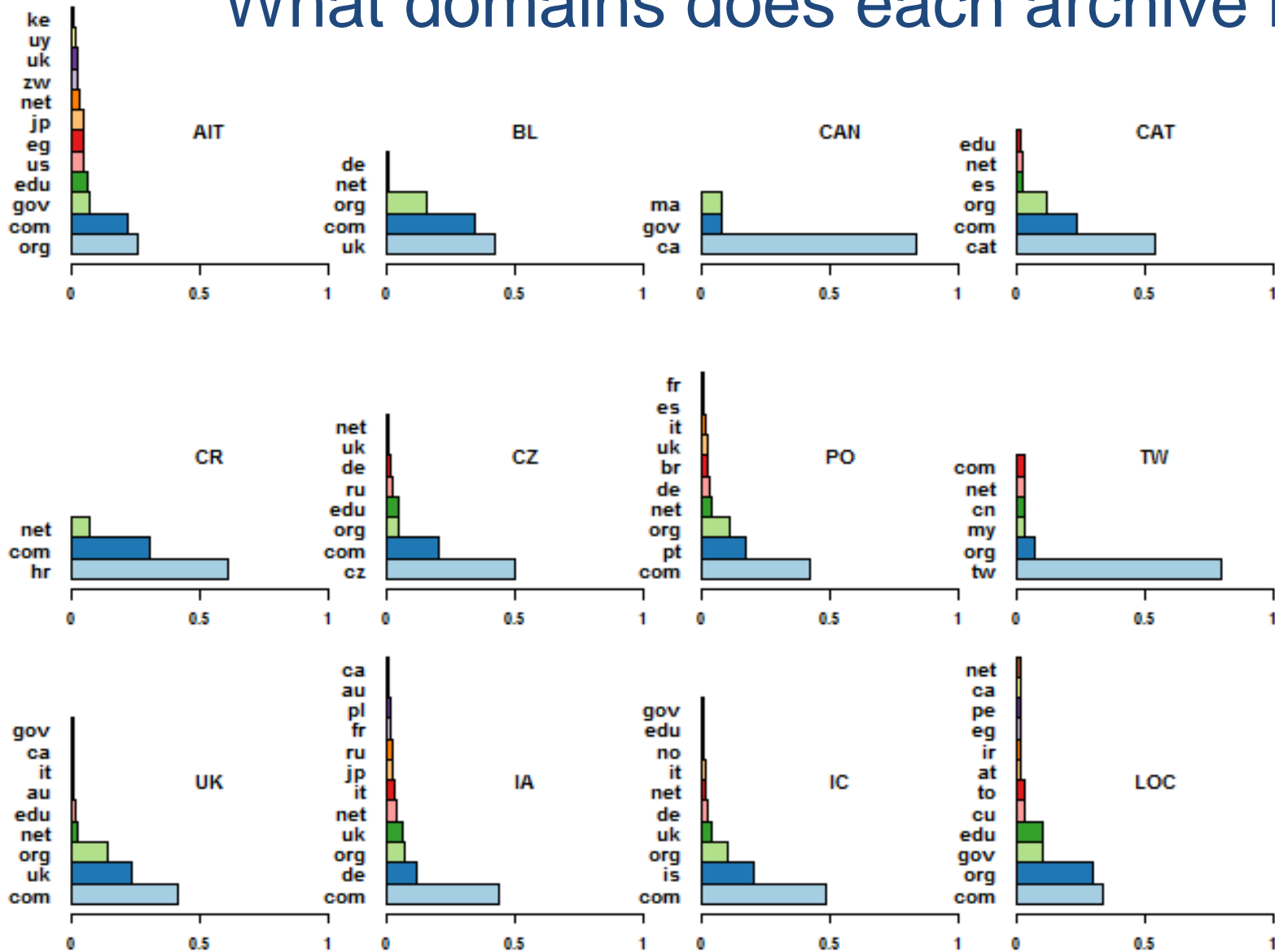
AlNoamany, Weigle, and Nelson, "Access Patterns for Robots and Humans in Web Archives", JCDL 2013

# What domains does each archive hold?

<b>Archive Name</b>	<b>FullText search</b>	<b>Website</b>
IA Internet Archive		<code>web.archive.org</code>
LoC Library of Congress		<code>www.loc.gov/lcwa</code>
IC Icelandic Web Archive		<code>vefsafn.is</code>
CAN Library & Archives Canada	x	<code>www.collectionscanada.gc.ca</code>
BL British Library	x	<code>www.webarchive.org.uk/ukwa</code>
UK UK Gov. Web Archive	x	<code>webarchive.nationalarchives.gov.uk</code>
PO Portuguese Web Archive	x	<code>arquivo.pt</code>
CAT Web Archive of Catalonia	x	<code>www.padi.cat</code>
CR Croatian Web Archive	x	<code>haw.nsk.hr</code>
CZ Archive of the Czech Web	x	<code>webarchiv.cz</code>
TW National Taiwan University	x	<code>webarchive.lib.ntu.edu.tw</code>
AIT Archive-It	x	<code>www.archive-it.org</code>

AlSum, Weigle, Nelson and Van de Sompel, "Profiling Web Archive Coverage for Top-Level Domain and Content Language," TPDFL 2013.

# What domains does each archive hold?



AIsum, Weigle, Nelson and Van de Sompel, "Profiling Web Archive Coverage for Top-Level Domain and Content Language," TPDFL 2013.

# Sometimes the live web "leaks" into the archive

Internet Archive WayBackMachine  
http://www.cnn.com/ 15,098 captures 15 Aug 00 - 29 Jul 11  
JUL SEP OCT 3 2007 2008 2009  
Close Help

CNN.com Web: CNN News CNN Videos SEARCH POWERED BY Google

HOME WORLD U.S. POLITICS CRIME ENTERTAINMENT HEALTH TECH TRAVEL LIVING BUSINESS SPORTS TIME.COM VIDEO IREPORT IMPACT

Hot Topics » Hurricane Gustav Edition: International | Set Pref

Sept 3, 2008

Make CNN Your Home Page

Republican National Convention 2008

**Palin's path from city hall to governor's mansion**  
When she played basketball in high school, Sarah Palin, the soon-to-be Republican vice presidential nominee, earned the nickname "Sarah Barracuda" for her fierce competitiveness. In the 21 months she has served as governor of Alaska, no one is suggesting she's lost her fighting edge. full story

- Palin ready to lead? | Analysts: Her task
- Palin to call for reform in RNC speech
- Will her gender sway women to Palin?

HEALTH MAGAZINE  
Secrets to a healthy heart

**Latest News**

- Poll measures race in three key states 19 min
- Dems blast Lieberman, say he lied to delegates
- Ticker: McCain greets Palin's daughter, fiancé
- Martin: Keep politics out of Bristol Palin issue
- Biographer: America, meet Sarah Palin
- iReport.com: Can a mom of 5 be VP?
- Cafferty: Should McCain consider different VP?
- CNNMoney: Auto sales plunge
- Gunman's bloody trail leads to six bodies
- Caylee's grandma disputes evidence
- Nagin: Residents won't be turned away
- CNNMoney: Gulf oil production scrambling back
- Hanna roams Caribbean, may hit U.S.
- Pakistan protests 'coalition air attack'
- The cartoonist beloved by GIs and regular guys
- 8 dogs die in hot truck during lunch break
- Review: Google's Chrome needs more polish
- New Marilyn Monroe film scenes found
- Beyonce's sister aims for a path of her own
- CNN Wire: Paraguay coup plot alleged

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**Republican National Convention »**

- Bernstein: Democrats better take note
- Bush, McCain still an uneasy alliance
- Interactive: How conventions work
- McCain arrives in Minnesota for convention
- Key players | Trivia | The Forum | In Depth

Viewer's Guide

**Video »**

- Gustav recovery briefing LIVE
- Dogs die during lunch break 1:39
- The RNC in St. Paul LIVE

LIVE: Watch coverage of the RNC & Tropical Storm Hanna

**2012**

**FIRST PRESIDENTIAL DEBATE OBAMA | ROMNEY**

**CNN TV »**

- Palin in prime-time

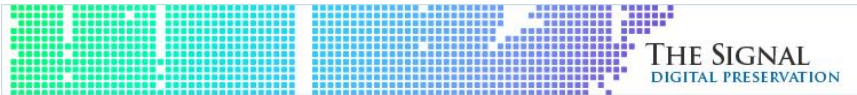
<http://ws-dl.blogspot.com/2012/10/2012-10-10-zombies-in-archives.html>

# ODU's WS-DL Group



# ODU's WS-DL Group

- Our recent work has been featured in the popular press



- We're always looking for more great students!

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<http://www.cs.odu.edu/~mweigle/>  
<http://ws-dl.blogspot.com/>