CSE 199
Internet, Computing and Society

Brief History of the Internet

Much of this is based on:
Administrivia

Let’s try TopHat!
Syllabus quiz should now be assigned, it is due next Wednesday at midnight.

Remember your 8 hours without the Internet assignment and essay.

UBLearns <-> Course Website

Yes, you have recitation this week

No, you do not have a final exam

No class Monday the 5th (Labor Day)! Yes, there is class on Wednesday and recitation on Thursday/Friday ;-)
What Drove the Success of the Internet?

- **TCP/IP (We will discuss this more later in the semester)**
  - TCP/IP is a set of *software protocols* that enable the Internet to work
  - It is *flexible*: All kinds of networking technologies (wired networks, wireless networks, satellite networks, etc.) can run together.

- **Early networking technologies**
  - Packet switching, IMPs, Ethernet, etc.
What Drove the Success of the Internet?

- **Applications**
  - Up to the early 90's, email was the most popular application.
  - After that, WWW (World Wide Web) took over.
  - After that, apps
How People Used Email in the Early Years

(Watch until 2:00 and then skip to 3:10)
World Wide Web (WWW)

- In 1989, Tim Berners-Lee invented **WWW**.
- **Three components**
  - Hypertext: You click on a word and it takes you to a different document.
  - URL (Uniform Resource Locator): A unique name for a piece of data (such as a web page)
  - HTML (Hypertext Markup Language): A language that composes Web pages with texts, images, links, etc.
World Wide Web (WWW)

- In 1993, Mosaic (first graphical browser) was developed.
World Wide Web (WWW)

(Watch until 3:00)
World Wide Web (WWW)

- In the early days, directory services (not search engines) were popular.
  - Example: Early Yahoo! organized Web pages into different categories.
In the 90’s and early 2000’s, many search engines were competing.
World Wide Web (WWW)

- Demo: The very first Web page
  - [http://info.cern.ch/hypertext/WWW/TheProject.html](http://info.cern.ch/hypertext/WWW/TheProject.html)
  - As you see, the page contained everything (everything!) on the Web at that time.

- Demo: The very first Web browser (simulator)
  - [http://line-mode.cern.ch/www/hypertext/WWW/TheProject.html](http://line-mode.cern.ch/www/hypertext/WWW/TheProject.html)
  - (Links are clickable; click on the cursor to type)
  - Used on a terminal
World Wide Web (WWW)

- **Demo: archive.org (a.k.a., Wayback Machine)**
  - [https://web.archive.org](https://web.archive.org)
  - Try it yourself!
  - Note - this is a great example of why you need to be careful of what you put online - nothing ever really goes away :-)

- **Yahoo!**

- **Google**
World Wide Web (WWW)

- **Facebook**

- **UB CSE**

- Question: Which site do we want to try for demo now?
World Wide Web (WWW)

- Demo: Live statistics
Apps

Before iPhone: 1992 IBM Simon (left; watch the whole clip) 1992 Xerox PARC Tab (right; watch until 0:48 then skip to 1:38)
Apps

Evolution: E.g., using sensors (Microsoft Research, 1999; watch the whole clip)
Apps

Today

http://www.internetlivestats.com/watch/smartphones-sold/

http://www.internetlivestats.com/watch/tablets-sold/
Another Influencing Factor?

- Anyone know who this is?
  - Robert Morris, a professor at MIT
  - He's done a lot of good work for the Internet.
  - But also...
Another Influencing Factor?

“On November 2, 1988, Robert Morris, Jr., a graduate student in Computer Science at Cornell, wrote an experimental, self-replicating, self-propagating program called a worm and injected it into the Internet.”

Long story short … it broke the Internet.  

Most Internet sites were knocked off the ‘net, and many hosts failed.

“Robert T. Morris was convicted of violating the computer Fraud and Abuse Act (Title 18), and sentenced to three years of probation, 400 hours of community service, a fine of $10,050, and the costs of his supervision. His appeal, filed in December, 1990, was rejected the following March.”

(From: https://www.cs.indiana.edu/docproject/zen/zen-1.0_toc.html)
Another Influencing Factor?

Today

http://www.internetlivestats.com/watch/websites-hacked/
Discussion

- What are some popular applications that you use today?
- How have they changed? Were the same applications popular, say, 5 years ago?
Social media...
Discussion

● Quiz time
  ● What is social media?
  ● What social media app do you think was most popular with CSE 199 students in 2018?
  ● What about today?
  ● Why do you think that changed?
Is there anything good about social media?
Wikipedia – moving from Web 1.0 - 2.0

- https://www.youtube.com/watch?v=oVFPW0r4jWk
Assisting the creation of social movements
The upside of social media

- Reasons to be positive about social media
  - Connectivity
  - Aides in the creation of social movements, here and abroad
  - A new source for immediate news and knowledge
Social media is the worst thing in the world
Facebook and Myanmar

The New York Times

A Genocide Incited on Facebook, With Posts From Myanmar’s Military

- Nearly 700K Rohingya have become refugees in Myanmar
- False information spread on Facebook was a critical part of this

Bullying and Instagram

- A survey done by the Pew Research Center shows that 59% of teens have been bullied online.
- Cyber bullying doubles the chance of attempted suicide and has resulted in the development of low self-esteem, depression, academic difficulties, and school violence.
Abuse of female journalists on Twitter

- Study of tweets @ 778 Journalists in the US and UK
  - A female journalist or politician harassed **every 30 seconds**
  - 7.1% of tweets sent to the women in the study were problematic or abusive.
  - Online abuse against women cuts across the political spectrum. Politicians and journalists faced similar levels of online abuse and we observed both liberals and conservatives alike.
Think of the last time you did something you didn’t want people to know about

Now, think about what would happen if everybody in the world could access that fact about you, forever.
Summarizing – 3 Key Points

1. By and large social media companies have not taken responsibility for their actions, many of which have negative consequences.
2. But, social media still has the potential to aid social movements (E.g. #MeToo, #BlackLivesMatter, #TransLivesMatter, …)
3. Open question as to how, and to what extent
Administrivia

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Questions?