Summary of today

- What's happening in Compsci 82?
  - From surveys to final papers to ...
- What is Moore's Law and what does it mean?
  - Analogs for other digital devices and systems
- What is online advertising/behavioral target?
  - How is it conducted, who does it, who makes $$
- How is voting relevant to Compsci 82?
  - Internet voting? Digital voting?

Moore's Law meets Hurley's Law

- See Wikipedia entry for complete Info
  - http://tinyurl.com/6n7kay 13 hrs/min in 2008

“Over the next decade, people will be at the center of their video and media experience. More and more consumers will become creators. We will continue to help give people unlimited options and access to information, and the world will be a smaller place.”

Can we double every two years?

- Explaining Moore's Law:
  - http://www.youtube.com/watch?v=bLSMn0cNWAw
  - http://www.youtube.com/watch?v=D3dKbq5AXz8

Illustrated History of Voting

- Privacy, Reliability, Anonymity, ...
  - Who gets to vote, whose votes are counted?
History of Voting

- [http://americanhistory.si.edu/vote/votingmachine.html](http://americanhistory.si.edu/vote/votingmachine.html)

Voting, Technology, Internet

- “If elections are defective, the entire democratic system is at risk ... Americans are losing confidence in the fairness of elections, and while we do not face a crisis today, we need to address the problems of our electoral system.”
  
  
  Commision on Federal Election Reform

- From 1876 (Rutheford B. Hayes) to 2000 (George Bush), pushes for “voting machine reform”: HAVA 2002

How hard to attack voting machines?

- How hard to hack/attack paper ballot?
  - What about Internet voting? DRE machine?

- How hard is it to find the phone number of John Smith using a phone book?
  - What about whose number is 914.962.4204?

- How data is organized affects “difficulty”
  - Given a reverse-number phone book...
  - Given Google ...

Complexity and Computer Science

- Time doubles when items double in size
  - Linear or $O(n)$

- Time quadruples when items double
  - Quadratic or $O(n^2)$: 3 to 9, 5 to ?

- Time constant/unchanging when doubling
  - Constant time or $O(1)$

- Why does this matter?
Attacks (see Wallach paper)

- Absentee/vote-by-mail
  - To steal N votes must do O(N) work, bribe or coerce each voter. What about using postal workers? O(N/P)
  - Centralized DoS attack, potentially O(1), throw out all envelopes, all from some zip-code, etc.

- DRE attack
  - Anonymity using O(P) or O(1) since order of votes is kept in machine (maybe)
  - Visits, poll-workers, ...

Legal v Technical: Courts of Law

- Perfect 10 v everyone
  - Mostly copyright: fair-use, infringement

- Blizzard v BNETD and MDY
  - Copyright, licensing, section 117

- Blumenthal v Drudge and AOL
  - Who is liable for libel online?

Perfect 10 v Google (and others)

- Thumbnails “transformative”
  - Anatomy of Google results

- History of Perfect 10
  - Who is sued and why?

Blizzard v BNETD and MDY

- Blizzard: $100 Million/month on WOW
  - MMO, how is it played? Licensed? Purchased
  - Network and updates (currently Bittorrent!)

- BNETD, open source, network alternative
- MDY, “Glider”, autoplayer
  - Warden as either spyware or protection
  - Tremendous implications if Blizzard wins