Privacy

Lecture 5-2

Computers & Society (CPSC 430)

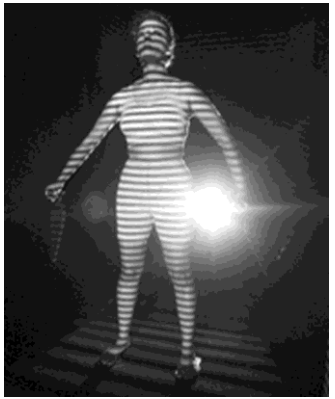
Kevin Leyton-Brown (Section 101)

Giulia Toti and Melissa Lee (Section 102)

https://www.cs.ubc.ca/~kevinlb/teaching/cs430

Ways Information Becomes Public

- Rewards or loyalty programs
- Body scanners
- Digital video recorders
- Automobile “black boxes”
- Enhanced 911 service
- RFIDs
- Implanted chips
- Cookies
- Spyware

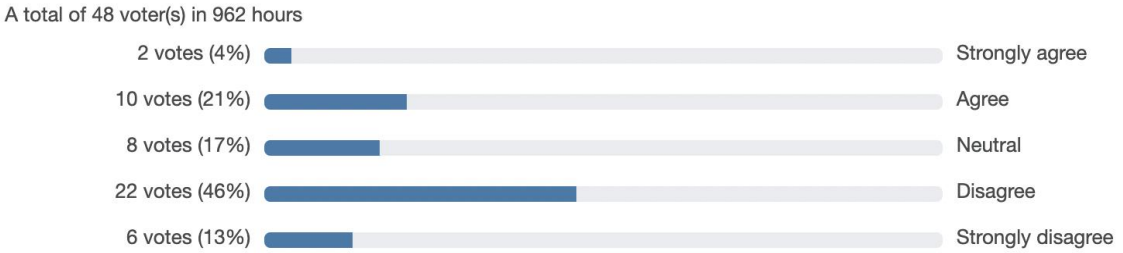


…can you think of others?

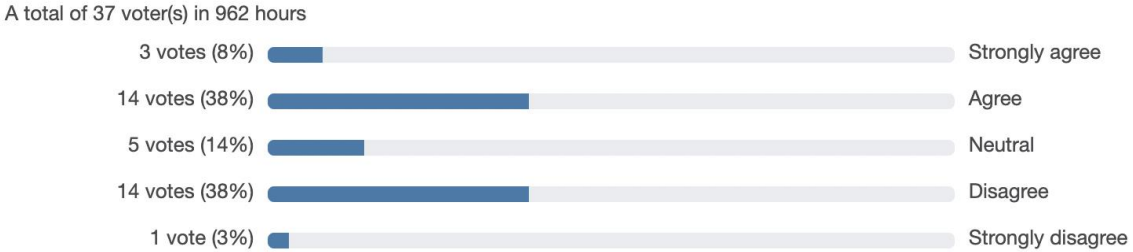
Information Privacy

"It should be illegal for shopping malls to install cameras for tracking customer behavior."

Section 101



Section 102



Data Mining

- Data mining
  - Searching for patterns or relationships in one or more databases
  - This info typically provided by the customer for another purpose
- Many internet services provided as an opportunity to gather valuable data
  - Google; Facebook; free online courses
- Also performed by the government
  - Efforts to detect terrorism via phone, bank, travel records
  - Tax audits
- *Questions:*
  - *Ownership: do you have any rights over info about transactions in which you participated?*
  - *Ethics: what data mining activities are unethical? Which are ethical?*
  - *Does it make a difference whether DM is opt-in or opt-out?*
  - *At what point does DM become "creepy"?*
  - *Should we worry about ending up in a "personalization bubble"?*

"On our watch"

This Italian movie, released in 2021, explores (satirically) the dangers of machine learning and data mining in the hands of powerful tech giants

https://www.youtube.com/watch?v=u50KHs1PXfM

Open Source

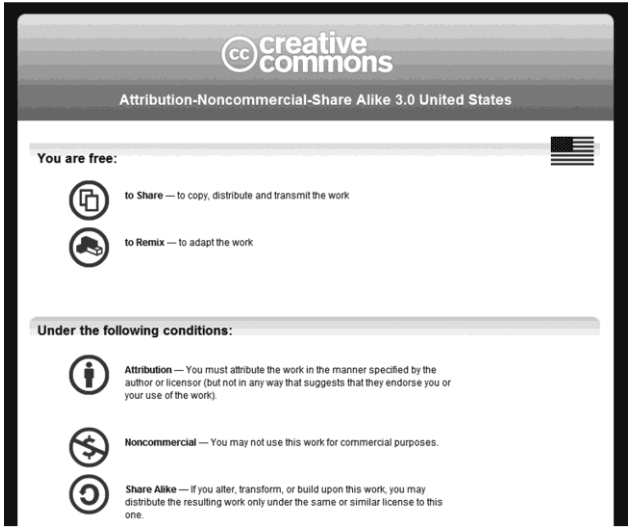
- A variety of licenses. Some typical ingredients:
  - No restrictions preventing others from selling or giving away software
  - Source code included in distribution
  - No restrictions preventing others from modifying source code
  - No restrictions regarding how people can use software
  - Same rights apply to everyone receiving redistributions of the software (copyleft)
- GNU Project (Richard Stallman, 1984-)
  - Goal: Develop open-source, Unix-like operating system
  - Most components developed in late 1980s
- Linux
  - Linus Torvalds wrote Unix-like kernel in 1991
  - Combined with GNU components to make an OS
  - putting pressure on Microsoft, Apple, and companies selling proprietary versions of Unix

Benefits and Drawbacks of Open Source

- Benefits
  - Gives everyone opportunity to improve program
  - New versions of programs appear more frequently
  - Eliminates tension between obeying law and helping others
  - Programs belong to entire community
  - Shifts focus from manufacturing to service
- Drawbacks
  - Without critical mass of developers, quality can be poor
  - Without an “owner,” incompatible versions can arise
  - Relatively weak graphical user interfaces
  - Poor mechanism for stimulating innovation (no companies will spend billions on new programs)

Creative Commons

- Under current copyright law, eligible works are copyrighted the moment they are created
- No copyright notice does not mean it's ok to copy
- Must contact people before using work
- That slows down creative reuse
- Free Creative Commons license indicates
  - Which kinds of copying are ok
  - Which rights are being retained
- Flickr and Magnatune two well-known sites using Creative Commons licenses



Safe Software Development

- Reverse engineering okay
- Companies must protect against unconscious copying
- Solution: “clean room” software development strategy
  - Team 1 analyzes competitor’s program and writes specification
  - Team 2 uses specification to develop software
- Interestingly, same development strategies also used to ensure that open source licenses don’t “infect” commercial software