Lecture Overview

- Examine and Analyze some CS Specific Issues
  - Email and spam
  - World Wide Web
  - Censorship
  - Freedom of expression
  - Children and inappropriate content
  - Breaking trust on the Internet
  - Internet addiction

How Email Works

- Email: Messages embedded in files transferred between computers
- Email address: Uniquely identifies cyberspace mailbox
- Messages broken into packets
- Routers transfer packets from sender's mail server to receiver's mail server

Routers Pass Email from LAN to LAN

The Spam Epidemic

- Spam: Unsolicited, bulk email
- Spam is profitable
  - More than 1000 times cheaper than ‘junk mail’
  - Profitable even if only 1 in 100,000 buys product
- Amount of email that is spam has ballooned
  - 90 trillion – number of e-mails sent on the Internet
  - 247 billion – average number of e-mail messages/day
  - 1.4 billion – number of e-mail users worldwide
  - 100 million – new e-mail users from the year before
  - 81% – percentage of e-mails that were spam
  - 92% – peak spam levels late in the year
  - 24% – increase in spam over previous year

The Spam Epidemic

- How spammers get email addresses
  - Web sites, chat-room conversations, newsgroups
  - Computer viruses harvest addresses from PC address books
  - Dictionary attacks
  - Contests
- Most spam sent out by bot herders who control huge networks of computers
- Spam filters block most spam before it reaches users’ inbox

Need for Socio-Technical Solutions

- New technologies sometimes cause new social situations to emerge
  - Calculators – feminization of bookkeeping
  - Telephones – blurred work/home boundaries
- Spam an example of this phenomenon
  - Email messages practically free
  - Profits increase with number of messages sent
  - Strong motivation to send more messages
- Internet design allows unfair, one-way communications
Case Study: Ann the Acme Accountant

* Ann: Accountant at Acme Corporation
* She distributes paychecks to all 50 employees
* Ann sends email advertising Girl Scout cookie sale
* 9 recipients order cookies; average 4 boxes each
* Other 40 recipients unhappy to get email; half complain to a co-worker
* Did Ann do anything wrong?

Kantian Analysis

* We should always respect autonomy of others, treating them as ends in themselves and never only as the means to an end (2nd formulation of Categorical Imperative)
* Ann didn’t misrepresent what she was doing
* She didn’t force anyone to read the entire email
* Some who read her email chose to order cookies
* Therefore, she didn’t “use” others, and her action was not strictly wrong
* An “opt in” approach would have been better

Act Utilitarian Analysis

* Benefit to Girls Scouts = $108
  - $3 profit per box of cookies
  - 36 boxes sold
* Harm to company: time wasted
  - Orders taken during breaks
  - Lost productivity from complaining: $70
    - 20 employees x 2 x 5 minutes/employee = 200 minutes
    - 3.5 hours x $20/hour = $70
* Benefits exceed harms, so action good
* Company may create policy against future fundraisers

Rule Utilitarian Analysis

* Q: What would be consequences of everyone in company used email to solicit donations?
* A: Plenty of employee grumbling and lower morale
  - If all doing it, unlikely any one cause would do well
  - Harms greater than benefits, so Ann’s action was wrong

Social Contract Theory Analysis

* Acme Corporation has no prohibition against using its email system this way
* Ann was exercising her right to express herself
* Some people didn’t appreciate message, but she didn’t act like a spammer
  - She didn’t conceal her identity
  - She wasn’t selling a fraudulent product
* Ann did nothing wrong

Summary

* Analysis reached different conclusions, but Ann could have taken a less controversial course
* She could have posted a sign-up sheet to identify those interested in cookie sale
* That way, she would have sent email only to those interested, avoiding the problems of grumbling and lost productivity
Attributes of the Web

- It is decentralized
- Every Web object has a unique address
- It is based on the Internet
- "Anonymous" communications possible

Discussion

Do you agree with the position that anonymity should be preserved in cyberspace?
Or should every user's digital identity be mandated in some way?

How We Use the Web

- Shopping
- Socializing (e.g., Facebook)
- Contributing content (e.g., wikis, blogs)
- Blogging
- Learning
- Exploring our roots
- Entering virtual worlds
- Paying taxes
- Gambling
- Taking humanitarian action
- Lots more!

Twitter

- More than 200 million users
- Blogging tool
- Business promotion
- Role in Arab Spring uprisings debated
  - (+) Social networks lead to politicization
  - (-) Ties in social networks too weak for high-risk activism

Governmental Control: Too Much or Too Little?

- Burma (Myanmar), Cuba, North Korea: Internet virtually inaccessible
- Saudi Arabia: centralized control center
- People's Republic of China: "one of most sophisticated filtering systems in the world" as well as censorship
- Germany: Forbids access to neo-Nazi sites
- Russia just tested Internet Disconnect
- United States: Repeated efforts to limit access of minors to pornography

Forms of Direct Censorship

- Government monopolization
- Prepublication review
- Licensing and registration
### Self-censorship

- Most common form of censorship
- Group decides for itself not to publish
- Reasons
  - Avoid subsequent persecution
  - Maintain good relations with government officials (sources of information)
- Ratings systems created to advise potential audience
  - Movies, TVs, CDs, video games
  - *Not* the Web

### Challenges Posed by the Internet

- Many-to-many communications
- Dynamic connections
- Huge numbers of Web sites
- Extends beyond national borders, laws
- Hard to distinguish between minors and adults

### Ethical Perspectives on Censorship

- Kant opposed censorship
  - Enlightenment thinker
  - “Have courage to use your own reason”
- Mill opposed censorship
  - No one is infallible
  - Any opinion may contain a kernel of truth
  - Truth revealed in class of ideas
  - Ideas resulting from discourse are more influential

### Mill's Principle of Harm

> “The only ground on which intervention is justified is to prevent harm to others; the individual's own good is not a sufficient condition.”

### Discussion

**What is your moral assessment of the Chinese government's effort to censor the Internet?**

In your view, do the Internet's free speech properties (embedded in its underlying code) slowly erode any government's ability to control online expression?

**Discussion**

You work as the senior vice president for International Markets for Google. Your job is to prepare the company for its move into China.

During negotiations with Chinese officials, you are given the following ultimatum: remove all links to Web pages blocked by the Chinese government from search results. Otherwise Google will be blocked and unavailable to Chinese citizens.

China is a large new market for Google, so the consequences of being excluded from that market are serious. Competitors like Yahoo seem willing to play along with China.

What would you recommend to Google's CEO about how to proceed?

What are the dangers involved with this strategy?
Discussion

Should companies like Cisco be concerned that their routers are being used to filter out sensitive content in countries like China? Are these companies complicit in China’s censorship regime?

Freedom of Expression: History

- *De Scandalis Magnatum* (England, 1275)
- Court of Star Chamber
- 18th century
  - No prior restraints on publication
  - People could be punished for sedition or libel
- American states adopted bills of rights including freedom of expression
- Freedom of expression in 1st amendment to U.S. Constitution

1st Amendment to U.S. Constitution

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

Discussion

What sort of First Amendment protection do Web sites filled with hate speech or racist speech deserve?

Freedom of Expression

Not an Absolute Right

- 1st Amendment covers political and nonpolitical speech
- Right to freedom of expression must be balanced against the public good
- Various restrictions on freedom of expression exist

FCC v. Pacifica Foundation et al.

- George Carlin records “Filthy Words”
- WBAI in New York airs “Filthy Words” (1973)
- FCC issues declaratory order to Pacifica
- Pacifica sues
- U.S. Supreme Court ruled FCC did not violate 1st Amendment (5-4 decision)
  - Broadcast media “uniquely pervasive”
  - Broadcasting uniquely accessible to children
Case Study: Kate’s Blog

- Kate: Maintains a popular “life on campus” blog
- Jerry: Another student; active in Whig Party
- At private birthday party, someone gives Jerry a Tory Party T-shirt as a gag, and Jerry puts it on
- Kate uses cell phone to take picture of Jerry when he isn’t looking, posts it on her blog
- Story read by many people on and off campus
- Jerry confronts Kate and demands she remove photo; she complies, and they remain friends
- Kate’s blog and Jerry both become more popular

Kantian Analysis

- Kate uploaded Jerry’s photo to her blog without asking his permission
- She treated him as a means to her end of increasing the readership of her Web site
- Her action was wrong

Social Contract Theory Analysis

- Birthday party held in apartment of one of Jerry’s friends
- Jerry had a reasonable expectation of privacy
- Kate violated Jerry’s right to privacy
- Kate’s action was wrong

Act Utilitarian Analysis

- Benefits
  - Popularity of Kate’s blog increased (definitely)
  - Jerry become more popular on campus (definitely)
- Harms
  - Jerry’s anger at Kate (only temporary)
  - Photo could discredit Jerry at some point in future (unlikely)
- Kate did nothing wrong by posting Jerry’s photo

Rule Utilitarian Analysis

- What if everyone were constantly taking photos of people they encountered and posting them?
- Positive consequences
  - People would have more opportunities to keep up with what their friends are doing
  - People might be more reluctant to engage in illegal activities
- Negative consequences
  - People would become more self-conscious
  - Some relationships would be harmed
- Negative consequences more weighty than positive consequences, so Kate’s action was bad

Summary

- Three out of four analysis: Wrong for Kate to post the photo without asking Jerry’s permission
- Kate figured it would be better to beg for forgiveness than ask for permission, but she cut Jerry out of a decision that affected both of them, and that’s no way to treat a friend
- Kate should have tried to get Jerry’s consent
Web Filters
- Web filter: Software that prevents display of certain Web pages
  - May be installed on an individual PC
  - ISP may provide service for customers
- Methodologies
  - Maintain “black list” of objectionable sites
  - Examine content for objectionable words/phrase

Child Internet Protection Act
- Libraries receiving federal networking funds must filter pages containing obscenity or child pornography
- U.S. Supreme Court ruled CIPA did not violate 1st Amendment guarantees (6-3 decision in June 2003)

Ethical Evaluations of CIPA
- Kantian evaluation: CIPA is wrong
- Act utilitarian evaluation: depends on how benefits and harms are weighed
- Social contract theory: freedom of conscience should be given precedence

Discussion
Are automated content controls a reasonable means of dealing with pornographic material on the Internet?
At what level should these controls be deployed?
  - Parent
  - school/library
    - Do schools/libraries have any legal and/or moral duty to protect children from indecent and obscene material?
  - ISP
    - Do ISPs have any legal and/or moral duty to protect children from indecent and obscene material?

Sexting
- Definition: sexually suggestive text messages or emails with nude or nearly nude photographs
- In a 2009 survey, 9% of U.S. teenagers admitted to sending a sext, 17% admitted to receiving a sext
- Case of Jesse Logan
  - Committed suicide due to harrassment over sending pictures
- Case of Phillip Alpert
  - 18 year old distributed pictures of 16 year old girlfriend. 5 year probation
- Case of Ting-Yi Oei
  - Lost job over un-reported picture on student’s cell phone.

Identity Theft (1/2)
- Identity theft: When a person uses another person’s electronic identity
- Leading form of identity theft is credit card fraud
- Financial institutions contribute to problem by making it easy to open new accounts
- About 10 million cases of identity theft in U.S. in 2010
- Consumer’s liability for credit card losses limited to $50
Identity Theft (2/2)

- Nearly half of cases from lost credit card, checkbook, etc.
- In 20% of cases, credit card number stolen at time of making purchase (skimmers)
- About 1 million cases of identity theft annually in United States from online activities
- Phishing: Use of email to attempt to deceive people into revealing personal information
- Identity theft a federal crime, but only 1 in 700 cases results in an arrest

Chat-Room Predators

- Chat room: Supports real-time discussions among many people connected to network
- Instant messaging and chat rooms replacing telephone for many people
- Some pedophiles meeting children through chat rooms
- Police countering with “sting” operations

Ethical Evaluations of “Stings”

- Utilitarian evaluation
  - Public is safer – net positive
- Kantian evaluation
  - Operation wrong (using chat-room occupants as a means to an end)
- Social contract theory evaluation
  - Police misrepresented themselves.

False Information

- Quality of Web-based information varies widely
- Other media also have information of varying quality
  - The New York Times v. The National Enquirer
  - 60 Minutes v. Conspiracy Theory
- Google attempts to reward quality
  - Ranking uses “voting” algorithm
  - If many links point to a page, Google search engine ranks that page higher

Cyberbullying

- Cyberbullying: Use of the Internet or phone system to inflict psychological harm
- In a 2009 survey, 10% admitted to cyberbullying, and 19% said they had been cyberbullied
- Case of Ghyslain Raza
  - “Star Wars Kid” harassed - dropped out of school
- Case of Megan Meier
  - “Catfish”, scammed by neighbor and neighbor’s mother. Committed suicide.
- Megan Meier Cyberbullying Prevention Act

Is Internet Addiction Real?

- Some liken compulsive computer use to pathological gambling
- Traditional definition of addiction:
  - Compulsive use of harmful substance or drug
  - Knowledge of its long-term harm
- Some people spend 40-80 hours/week on the Internet, with individual sessions lasting up to 20 hours
Is Internet Addiction Real?

• Kimberly Young created test for Internet addiction
  – Sample question: “Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?”
  – Patients who answer “yes” to at least 5 of 8 questions may be addicted
• Others disagree, noting
  – Computer use is generally considered a positive activity
  – Excessive use does not lead to criminal activity
  – More accurate to call excessive use a compulsion

Contributing Factors

• Social factors
  – Peer groups
• Situational factors
  – Stress
  – Lack of social support and intimacy
  – Limited opportunities for productive activity
• Individual factors
  – Tendency to pursue activities to excess
  – Lack of achievement
  – Fear of failure

Ethical Evaluation

• Enlightenment view
  – Individuals can and should govern their lives
  – People are responsible for their choices
• Jeffrey Reiman’s view
  – Addict’s behavior makes sense if addict has no hope for a better future
  – Society bears responsibility for putting people in hopeless situations

Discussion

• Google Earth
  – Benefits?
  – Drawbacks?
  – Privacy issues
    • Sunbathers
    • Pictures of your home
    • Stalking?
    • “casing” a house
    • National security?
      – Military installations?
• Google Street View
  – Benefits?
  – Drawbacks?
  – Peers over hedges and walls
  – Privacy issues
    • People leaving strip club (abortion clinic, …)?
    • Crowd of protesters?
    • Domestic violence shelters?
    • License plates and human face recognition
      – Witness Protection
    • Collection of wifi data?
      • Wiretap violations?