CIS 381: Social & Ethical Issues of Computing

Professional Ethics

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Professions

- A **profession** is a vocation that requires:
  - High level of education
  - Practical experience
- Professionals are generally well-compensated
  - Doctors
  - Lawyers
- We trust professionals to…
  - Correctly ascertain and treat problems
  - Take actions for the good of their clients
Characteristics of Mature Profession

- Initial professional education
- Accreditation
- Skills development
- Certification
- Licensing
- Professional development
- Code of ethics
- Professional society
How Do Computer-Related Careers Stack Up?

• Certification and licensing not required
  - Some paths for software engineers to receive certification
  - Platform-specific certifications
• College degree not required
• Apprenticeship not required
• Membership in professional society optional
• No specific requirements for continuing education
• Most computer programmers, system analysts, etc. are part of teams
Importance of Taking Personal Responsibility

The ability to cause harm to members of the public is a powerful reason why those in computer-related careers must act according to ethical principles. Without universal certification and licensing and other components of a well-developed profession to rely upon, those in computer-related careers must take more personal responsibility for developing their ethical decision-making skills.
Software Engineering Code of Ethics

• Software engineers have opportunities to do good or do harm
• Software engineers ought to be committed to doing good
• Concern for the public interest is paramount
• No mechanical process for determining if an action is right or wrong
• Should not take an overly legalistic view of the Code
  - If Code doesn’t forbid something, that doesn’t mean it is morally acceptable
  - Judgment required
• Code reflects principles drawn from multiple ethical theories
Sections of the Code

- Public
- Client and employer
- Product
- Judgment
- Management
- Profession
- Colleagues
- Self
Alternative List of Fundamental Principles

• Be impartial.
• Disclose information that others ought to know.
• Respect the rights of others.
• Treat others justly.
• Take responsibility for your actions and inactions.
• Take responsibility for the actions of those you supervise.
• Maintain your integrity.
• Continually improve your abilities.
• Share your knowledge, expertise, and values.

[M. J. Quinn]
Test 2

• This Wednesday, April 10, in class
• Same format as Test 1
• More information and example questions posted on the web site
Assignment 7

- April 12:
  - No lecture at 9am
  - Attend CIS Seminar: Ralph Clifford, UMass Law School, 3-4pm, LIB 207
  - Talk on intellectual property
  - Write a reaction to the talk

- If you cannot attend the talk, I will provide another reading/video for A7 instead
Term Paper Presentation

- Presentation dates announced
- Topic presentations are done in groups, but each person should speak for 3-4 minutes
- Try to be succinct in discussion of the background and focus on the ethical issues and dilemmas
  - Can have one person summarize background (e.g. extra minute)
  - All should dig into the ethical issues and dilemmas
- Need to evaluate issues using ethical frameworks
- Groups can choose to examine different issues related to a topic or examine a similar issue using different frameworks
Case: Software Recommendation

• Sam Shaw asks for free advice on LAN security
• Prof. Smith answers questions and recommends top-ranked package
• Prof. Smith does not disclose
  - She has financial interest in company producing top-ranked package
  - Another package was given a “best buy” rating
• Did Prof. Smith do anything wrong?
Analysis

• Most relevant principles
  - Be impartial.
  - Disclose information others ought to know.
  - Share your knowledge, expertise, and values.

• Clause 1.06: Prof. Smith was deceptive

• Clauses 1.08, 6.02: Prof. Smith freely gave valuable information

• Clauses 4.05, 6.05: Prof. Smith did not reveal conflict of interest
Conclusion

• Professor Smith should have revealed her conflict of interest to Mr. Shaw.
Case: Child Pornography

• Joe Green a system administrator
• Asked to install new software package on Chuck Dennis’s computer
• Green not authorized to read other people’s emails or personal files
• Green sees suspicious-looking file names
• He opens some of Dennis’s files and discovers child pornography
• What should he do?
Analysis

- Most relevant principles
  - Be impartial
  - Respect the rights of others
  - Treat others justly
  - Maintain your integrity

- Most relevant clauses
  - 2.03: Somebody has misused the company PC
  - 2.09: Someone is using the PC for a purpose not in the employer’s interest
  - 3.13: Joe violated the policy against opening files
  - 5.10: Someone else may have planted the files on Chuck’s computer
Conclusions

- Joe was wrong to violate company policy to uncover child pornography
- Once he has this knowledge, however, he is obliged to share it with company authorities
- Joe should be discreet
Case: Anti-Worm

- Internet plagued by new worm that exploits hole in popular operating system
- Tim Smart creates anti-worm that exploits same security hole
- Tim’s anti-worm fixes PCs it infects. It also uses these PCs as launch pad to reach new PCs.
- Tim launches anti-worm, taking pains to keep it from being traced back to him.
- The anti-worm quickly spreads through Internet, infecting millions of computers
- System administrators around the world combat the anti-worm
Analysis

- Most relevant principles
  - Continually improve your abilities.
  - Share your knowledge, expertise, and values.
  - Respect the rights of others.
  - Take responsibility for your actions and inactions.

- Most relevant clauses:
  - 1.01: Tim did not accept responsibility for his action.
  - 1.08: The worm was free, but cost system administrators a lot of time.
  - 2.03: The anti-worm entered computers without permission of their owners.
  - 8.01, 8.02, 8.06: Tim improved his knowledge and skills by creating the anti-worm.
Conclusions

• Tim’s welfare is less important than the public good
• By attempting to hide his identity, Tim refused to accept responsibility for his actions
• Tim violated the property rights of the PC owners whose systems were infected by his anti-worm
• Tim violated the Code
Case: Consulting Opportunity

- Jean works in support organization for Acme Corporation
- Many Acme customers downgrading their level of support
- East Dakota gives Jean opportunity to run a training class similar to that provided by Acme
- Jean tells no one at Acme
- Jean develops materials at home on own time
- Jean takes paid vacation to teach class
Analysis

- Most relevant principles
  - Be impartial.
  - Take responsibility for your actions and inactions.
  - Disclose information that others ought to know.
  - Maintain your integrity.
  - Continually improve your abilities.
Analysis

• Most relevant clauses
  - 3.04: Jean was well qualified to develop materials and teach class
  - 8.04: By creating materials, Jean became even more familiar with Acme’s package and its capabilities
  - 4.05: Jean didn’t disclose his conflict of interest with his employer
  - 2.08: Jean deprived himself of “time off” needed to do his best work at Acme
  - 6.05: Jean put his own interest above that of his employer
Conclusions

• Jean did not disclose East Dakota’s offer or his decision to Acme’s management
• Acme’s management is likely to question Jean’s loyalty to the company
• Jean’s actions were wrong and unwise
Ethical Employers

- What makes a company ethical?
- What is fair treatment?
- What do you want from an employer?
- What is reasonable for an employer to ask from you?
Sexual Harassment

• Julie Ann Horvath leaving GitHub in 2014
  - After calling attention to the discrepancy in treatment between male & female employees, she was harassed by a founder’s wife
  - Later solicited for sex by a coworker
  - Quit after watching her male coworkers gawk at her female coworkers exercising with hula hoops and realizing she couldn’t change the culture
  - Github said they could not confirm Horvath’s story but they did “find evidence of mistakes and errors of judgment.”
  - CEO resigned
Sexual Harassment

- Susan Fowler left Uber after manager solicited her for sex [2017]
  - HR and upper management refused to intervene since he was a "high performer"
  - Fowler was cited as having "undocumented performance problems"
  - Over 20 employees fired at Uber after Fowler’s viral blog post
  - CEO resigned over this and other internal issues

- Allegations of misconduct continue to come to light in tech and other industries as well as academia
Whistleblowing

- Whistleblowing is when someone in a company reports immoral or illegal activities to an outside organization
  - Tries to report harmful situation through authorized channels
  - Rebuffed by organization
  - Publicizes company’s actions to general public through unauthorized channels
- Organizations may try to punish whistleblowers for their actions
  - Lose job or all chances of advancement
  - Financial and emotional hardship
Whistleblowing

- Allows for government fines or prosecution if laws or regulations are being violated
- Whistleblowers protected from company retaliation by federal and often state laws
  - False Claims Act
  - Whistleblower Protection Act

[M. J. Quinn, S. Abraham]
Case: Morton Thiokol/NASA

- Challenger explosion
- Roger Boisjoly and Morton Thiokol engineers documented dangers of low-temperature launches
- Morton Thiokol executives and NASA officials overrode and hid concerns
- Boisjoly shared information with Presidential commission
- Morton Thiokol retaliated
  - Boisjoly took medical leave, quit
  - Found job as a consultant two years later

[NASA, M. J. Quinn]
Case: Hughes Aircraft

- Factory for military-grade hybrid chips
- Some defective chips being approved
- Ruth Goodearl reported incidents to upper management

Consequences for Goodearl
- Harassed
- Fired
- Unemployment
- Bankruptcy
- Divorce

- Goodearl and Ruth Aldred sued Hughes Aircraft under False Claims Act and won

[M. J. Quinn]
What about the government?

- Whistleblower Protection Act (WPA) states that the government cannot take “adverse personnel actions” against employees who engaged in “protected disclosures to specified persons”
  - Personnel actions includes firing, demoting, and cutting pay but offers no protection against criminal prosecution
  - Specified persons means, in the case of classified information, only includes certain officials
- Does not apply to anyone in a confidential, policy-determining role, or apply to anyone in the FBI, CIA, or NSA
- The Intelligence Community Whistleblower Protection Act (ICWPA) permits disclosure of certain information to agency’s Inspector General (IG) but does not protect against retaliation

[S. Abraham]
What about the military?

• Military Whistleblower Protection Act (MWPA) provides similar protections as the IWPA but for military personnel
  - Disclosures should go through Inspectors General in the Department of Defense
  - Nominally provides protections against retaliation and reprisals

• IGs often do not acknowledge connection between previous whistleblowing and reprisal

• Incidentally the Nuremberg Principles do not allow for the “superior orders” defense in crimes under international law
Chelsea Manning

• In 2010, Pfc. Manning, currently deployed in Iraq, released classified and sensitive documents relating to the conduct of US soldiers in Iraq and Afghanistan to WikiLeaks
  - Revealed larger number of civilian casualties than US had reported
  - Included footage of the 2007 Baghdad airstrikes that killed two Iraqi war correspondents working for Reuters

• In May 2011, Manning charged by US Army with 22 counts of unauthorized possession and distribution of secret diplomatic and military documents
  - Received a 35-year sentence

• In 2017, President Obama pardoned her three days before leaving office

[S. Abraham]
Edward Snowden

• In March 2013, Snowden, a contracted NSA analyst, fled the US to Hong Kong

• Leaked information to the press on NSA’s Prism program as well as British agency, GCHQ, which was tapping fiber-optic cables under the codename Tempora

• Revealed spying not just against US and UK citizens but other international states, including China, Germany, Brazil, and Mexico

• Snowden currently in exile in Russia
Motives of Whistleblowers

- People become whistleblowers for different reasons
- Morality of action may depend on motives
- Good motive
  - Desire to help the public
- Questionable motives
  - Retaliation
  - Avoiding punishment
Corporate Response to Whistleblowing

• Whistleblowers are disloyal
• Whistleblowing has many harms
  - Bad publicity
  - Disruption of organization’s social fabric
  - Makes it hard for people to work as team
• If company causes harm, public can use legal remedies to seek damages
• Critique: Overly legalistic view of public harm?
Whistleblowing as Organizational Failure

• Whistleblowing harms organization
  - Bad publicity
  - Ruined careers
  - Erodes team spirit
• Whistleblowing harms whistleblower
  - Retaliation
  - Estrangement
• Organizations should improve communication
• Critique
  - Is this realistic?
  - Robert Spitzer: Organizations should return to using principle-based ethics in decision making

[M. J. Quinn]
Whistleblowing as Moral Duty

- Richard DeGeorge’s questions for whistleblowing
  1. Is serious harm to the public at stake?
  2. Have you told your manager?
  3. Have you tried every possible inside channel?
  4. Do you have persuasive documented evidence?
  5. Are you sure whistle-blowing will work?

- Under what conditions must you blow the whistle?
  - DeGeorge: If all five conditions are met
  - Others: If conditions 1-3 are met
  - Still others: Whistleblowing is never morally required

[M. J. Quinn]
Moral Responsibility

• Must be borne by people, not companies/organizations
• Is not exclusive
• Exclusive responsibilities:
  - Role responsibility: borne out of assigned duties
  - Causal responsibility: assigned if person did/didn't do something
  - Legal responsibility: assigned by law
• Michael McFarland: A team should be held to a higher level of moral responsibility than any of its members