

EthiCS

Sources:

<https://www.slideshare.net/jagannath908/computer-ethics-27777740>

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<http://www.lmu.edu/Page27945.aspx>

Comments

- There are entire books and courses on this subject
- This lecture (like every other lecture in this course) is really just here to expose you to some of the main concepts and ideas
- Let's start with a fun example

youtube-dl DMCA'd

- Have you heard of this tool?

“youtube-dl is a command-line program to download videos from YouTube.com and a few more sites”

- What is a DMCA?

- Digital Millennium Copyright Act Notice

“Recording Industry Association of America (RIAA) abused the Digital Millennium Copyright Act’s notice-and-takedown procedure to pressure GitHub to remove it.”

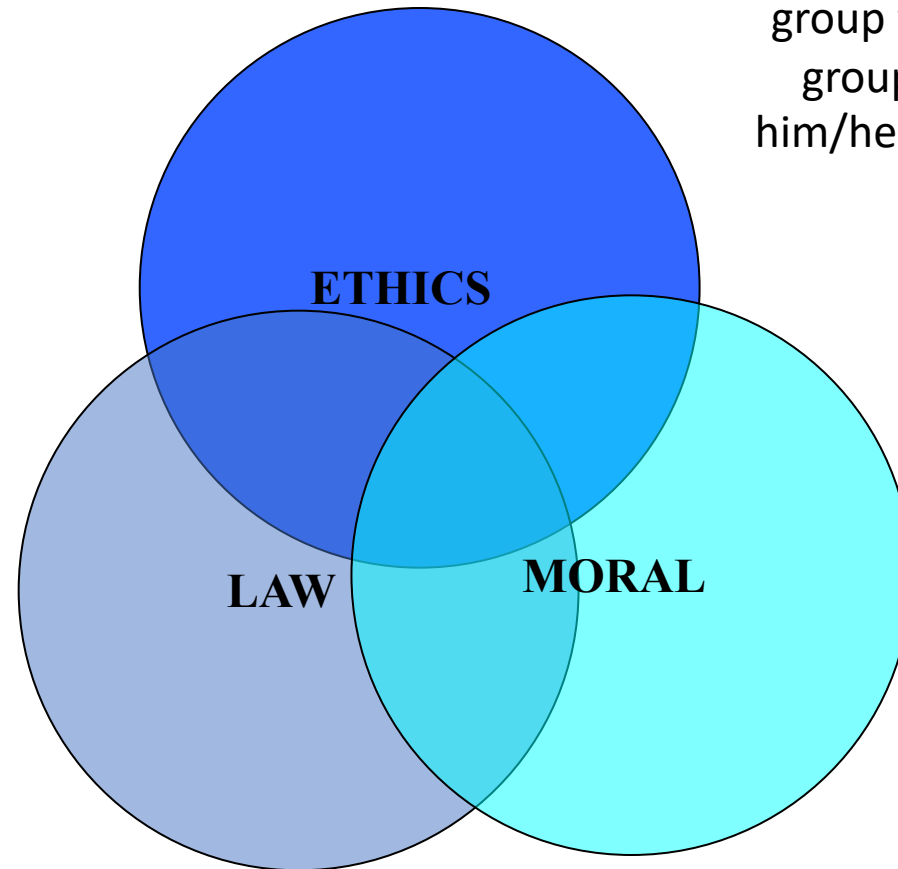
- EFF (Electronic Frontier Foundation)

The RIAA's letter refers to a single file of youtube-dl's source code which references several copyrighted songs. This file contains series of automated tests that verify the functionality of youtube-dl for streaming various types of video. The youtube-dl source code does not, of course, contain copies of these songs or any others. And the presence of several copyrighted song links in a large series of such tests does not induce or encourage copyright infringement, for several reasons. First, this file is not "prominent," as RIAA contends. Second, the unit tests do not cause a permanent download or distribution of the songs they reference; they merely stream a few seconds of each song to verify the operation of youtube-dl. Streaming a small portion of a song in a non-permanent fashion to test the operation of an independently created software program is a fair use. Saving a copy of a requested stream is only one function of youtube-dl, and youtube-dl does not distribute videos. Thus, the unit tests do not "suggest[] its use to copy and/or distribute" the referenced songs. The youtube-dl maintainers do not encourage the use of the tool to infringe copyright, nor do they market the tool for that purpose.

<https://github.com/github/dmca/blob/master/2020/11/2020-11-16-RIAA-reversal-effletter.pdf>

Societal Normative Systems

Any set of morally permissible standards of conduct each member of some particular group wants every other member of the group to follow (including the person him/herself). Ethics are voluntary, and are “over and above” morals.



A set of standards of conduct enforced by society on all people

Those standards of conduct every reasonable person wants everyone to follow (including the person him/herself).

Computing and Human Values

Ethics aim to

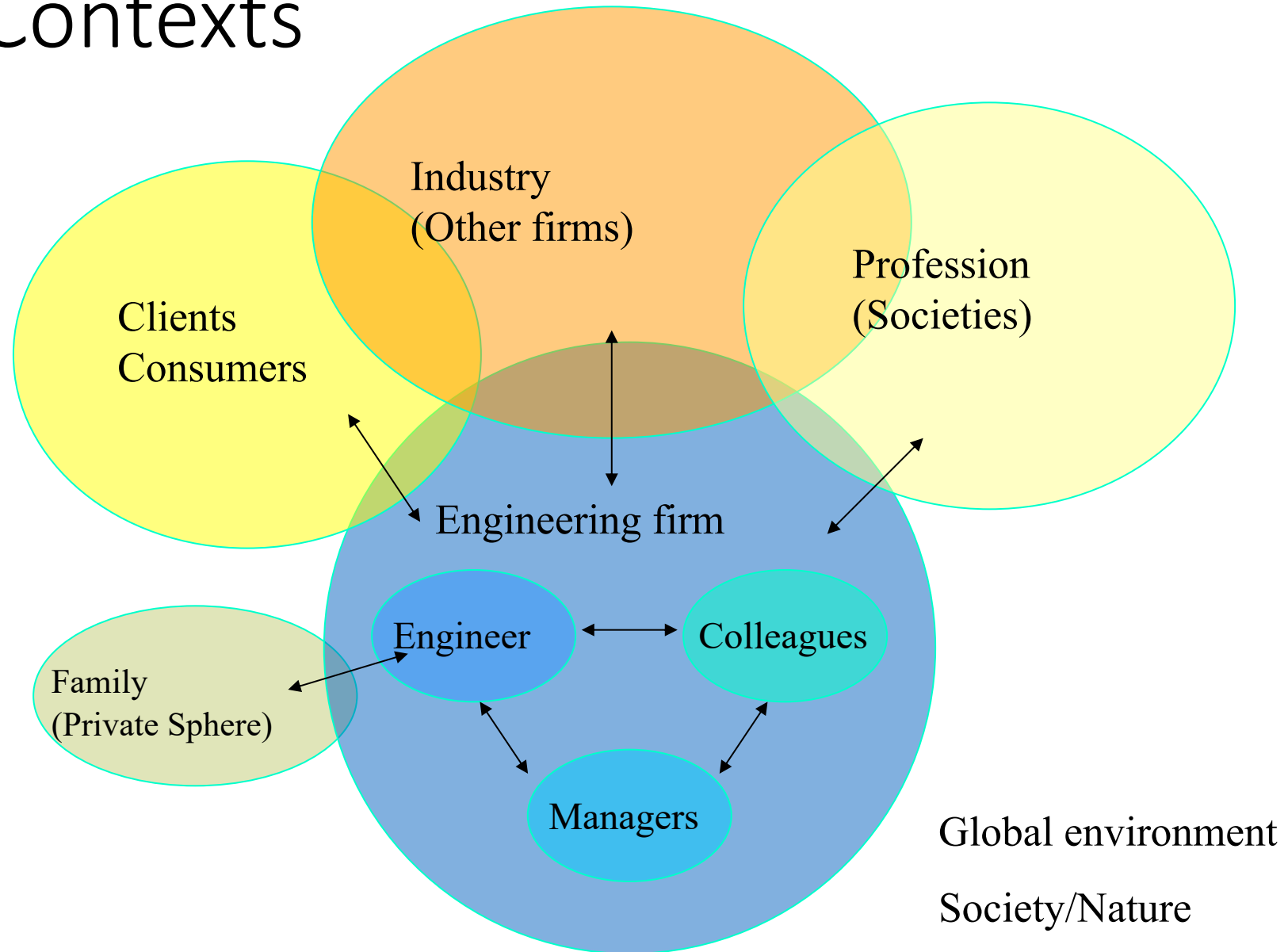
- Understand the impact of computing technology upon human values
- Minimize the damage that such technology can do to human values
- Identify ways to use computer technology to advance human values

Code of Ethics

Many layers for your code of ethics

- IEEE Code of Ethics
- ACM Code of Ethics
- Organizational
- Personal
- Etc.

Ethics Contexts



Some Obvious Stuff

- Don't use a computer to harm other people.
- Don't interfere with other people's computers.
- Don't use a computer to steal.
- Don't copy or use proprietary software for which you have not paid.
- Think about the social consequences of the program you are designing.

Topics

- Intellectual property rights (copyrights)
- Plagiarism
- Software Licenses
- Exploits and bounties
- Privacy, anonymity, tracking
- Machine learning
- Computers and society

Intellectual Property (IP)

Creations of the intellect:

- Inventions
- Literary works
- Artistic works
- Symbols, names, images, and designs used in commerce

Branches

- Industrial property (inventions)
- Copyright (literary and artistic works)

Intellectual Property (IP)

Industrial Property

- Inventions (patents)
- Trademarks
- Designs
- Commercial names
- Brands

Copyright

- Novels, poems, plays
- Films, music
- Drawing, painting, photography, sculptures
- Architectural designs

Copyright

- Legal concept
- Government gives creator exclusive right for a limited time
- Protect **expression** of ideas, not the idea
- Work is protected as soon as it exists
- Public register of copyright is not necessary

Google v. Oracle: Supreme Court considers software copyrights (2020-10-07)

A historic, multibillion-dollar lawsuit between Oracle and Google may come down to the jumbled attempts on Wednesday by eight Supreme Court justices to find an appropriate analogy to describe common computer code.

*...These helper programs, known as software interfaces, application programming interfaces or **APIs**, are a ubiquitous feature of today's networked digital economy, where different apps need to be able to work together and share information. Oracle asserts that this type of code, at least as created by Sun Microsystems, is nevertheless an expressive work that is eligible for copyright protections.*

- CNN Business

Software Plagiarism

- It's OK to take ideas with you
- It's not OK to take code (text files or object code) without ascribing credit to the owner/author
- It's not OK to give credit and take code if your use is against the license agreement
- You don't need to have signed anything to be obliged to follow the license

Software License

- Legal text governing the use or redistribution of software
- All software is copyright protected (source code and object code)
- Software can be made public domain though
- Licenses grant the licensee permission to use software in such a way that would otherwise be considered infringement

Software License

Tools

- <https://choosealicense.com/> (“Choose an open source license”)
- <https://tldrlegal.com/> (“Software Licenses in Plain English”)

My defaults:

- MIT (simple and permissive)
- WTFPL (Do What the Fuck You Want To Public License)

Exploit and Bounty Environment

- Let's say: you find a bug/vulnerability/exploit in a system
- What should you do?
 - First, contact the system developer
- What if they do nothing?
 - This would lead to a false sense of security of the system users
- **Responsible Disclosure** is a model in which a vulnerability or issue is disclosed only after a period of time that allows for the vulnerability or issue to be patched or mended

Privacy, Anonymity, and Tracking

- What can you do privately on the Internet?

If you trust a service, you could try

- Tor
- VPNs

Machine Learning Miscues

This is a large topic, with many subtleties and many **egregious** mistakes

- [Responsible AI](#) (A collection of controversial[]... AI use cases)
- [Awful-AI](#) (a curated list to track *current* scary usages of AI)
- [The Machine Ethics Podcast](#)
- Lending and Credit Approval; Hiring; Employee Evaluation; Criminal Sentencing; Risk Assessment; Predictive Policing; School Admission; Face Recognition; Dating; Fakes; Weaponry

Case Study

- <https://www.wired.com/story/free-speech-issue-cloudflare/>
- White supremacist groups have websites
- Cloudflare hosts a lot of websites (including Daily Stormer)
- The Daily Stormer was DDoS attacked by vigilantes
- Cloudflare's automated systems protected the website
- Free-speech debate is ignited
- Cloudflare terminated Daily Stormer account

Case Study (continued)

Who is in charge of delivering that content?

- Creators
- Platforms (Facebook, Wordpress, etc.)
- Hosts
- Transit Providers
- Proxies and CDNs
- DNS providers
- Registrars and registries
- ISPs
- Browsers
- Search engines
- Etc.

How do you even pick
who to protest?

Who ensures
freedom of speech?

Who is in charge of
censorship?

Loyola Marymount University Guidelines

STEP 1: ANALYZE THE CONSEQUENCES

- Assume you have a variety of options. Consider the range of both positive and negative consequences connected with each one.
- Who will be helped by what you do?
- Who will be hurt?
- What kind of benefits and harms are we talking about? After all, some "goods" in life (like health) are more valuable than others (like a new VCR). A small amount of "high quality" good can outweigh a larger amount of "lower quality" good.
- How does all of this look over the long run as well as the short run.
- After looking at all of your options, which one produces the best mix of benefits over harms?

Loyola Marymount University Guidelines

STEP 2: ANALYZE THE ACTIONS

- Now concentrate instead strictly on the actions.
- How do they measure up against moral principles like honesty, fairness, equality, respecting the dignity of others, respecting people's rights, and recognizing the vulnerability of individuals weaker or less fortunate than others?
- Do any of the actions that you're considering "cross the line," in terms of anything from simple decency to an important ethical principle?
- If there's a conflict between principles or between the rights of different people involved, is there a way to see one principle as more important than the others?
- What you're looking for is the option whose actions are least problematic.

Loyola Marymount University Guidelines

STEP 3: MAKE A DECISION

- And now, take both parts of your analysis into account and make a decision.

SDX Alliance is a large company that sells computers, computer components, and software. Ralph is hired as an entry-level software engineer at SDX Alliance. His first project was to assist in writing the code for SDX Alliance's new hard disc controller. He had previously worked on a similar system interning at a start-up and had written code which greatly enhanced the performance of their product. Ralph quietly re-uses this same code in the SDX Alliance product and does not think to tell anyone that he has used the code from his last job. His manager is thrilled with the speed improvements this code brings to the product.

Before the product is released, it has to undergo a four-month long quality assurance process review. During the review of the product, it was found the code which Ralph developed had been copyrighted by the startup he had previously worked for. Even though Ralph had developed the code, his previous company still owned the intellectual property rights to it.

When his manager informed Ralph of the problem, Ralph admits he did not realize he had made a mistake because he was not familiar with copyright laws. Ralph then goes on to explain that the start-up he used to work for is now out of business and is unsure if SDX Alliance would be able to get in contact with the owner of the copyright. If SDX Alliance can't use Ralph's code, then it will have to rewrite the entire code of the product, delaying its release by many months.

What should they do?

George Babbage is an experienced software developer working for Acme Software Company. Mr. Babbage is now working on a project for the U.S. Department of Defense, testing the software used in controlling an experimental jet fighter. George is the quality control manager for the software. Early simulation testing revealed that, under certain conditions, instabilities would arise that could cause the plane to crash. The software was patched to eliminate the specific problems uncovered by the tests. After these repairs, the software passed all the simulation tests.

George is not convinced that the software is safe. He is worried that the problems uncovered by the simulation testing were symptomatic of a design flaw that could only be eliminated by an extensive redesign of the software. He is convinced that the patch that was applied to remedy the specific tests in the simulation did not address the underlying problem. But, when George brings his concerns to his superiors, they assure him that the problem has been resolved. They further inform George that any major redesign effort would introduce unacceptable delays, resulting in costly penalties to the company.

There is a great deal of pressure on George to sign off on the system and to allow it to be flight tested. It has even been hinted that, if he persists in delaying the system, he will be fired.

What should George do next?

Leikessa Jones owns her own consulting business, and has several people working for her. Leikessa is currently designing a database management system for the personnel office of ToyTimeInc., a mid-sized company that makes toys. Leikessa has involved ToyTimeInc management in the design process from the start of the project. It is now time to decide about the kind and degree of security to build into the system.

Leikessa has described several options to the client. The client has decided to opt for the least secure system because the system is going to cost more than was initially planned, and the least secure option is the cheapest security option. Leikessa knows that the database includes sensitive information, such as performance evaluations, medical records, and salaries. With weak security, she fears that enterprising ToyTimeInc employees will be able to easily access this sensitive data. Furthermore, she fears that the system will be an easy target for external hackers. Leikessa feels strongly that the system should be more secure than it would be if the least secure option is selected.

Ms. Jones has tried to explain the risks to ToyTimeInc, but the CEO, the CIO, and the Director of Personnel are all convinced that the cheapest security is what they want.

Should Jones refuse to build the system with the least secure option?