

Professional Codes of Ethics

Ethics and Computing Chapter 3

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Motivation

- How do we handle ethical dilemmas encountered in our career?
- Our Personal Code of Ethics may be difficult to apply in specialized situations
- We need a Professional Code of Ethics

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Professional Codes of Ethics

- Association of Information Technology Professionals (AITP)
- Association for Computing Machinery (ACM)
- Institute for Electrical and Electronics Engineers Computer Society (IEEE -CS)
- Software Engineering Code of Ethics (ACM and IEEE-CS)
- National Society for Professional Engineers (NSPE)

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Functions of a Professional Code of Ethics

1. Symbolize professionalism of group
2. Protect group interests
3. Specify membership etiquette (professional courtesy)
4. Inspire good conduct (e.g., public service)
5. Educate members (life-long learning)
6. Discipline members

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Functions of a Professional Code of Ethics

7. Foster external relations with clients and others outside the profession
8. Enumerate principles to keep
9. Express ideals to aspire to
10. Put forth rules (specific principles)
11. Offer guidelines for gray areas
12. Codify rights of members

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AITP Code of Ethics

- www.aitp.org
- General code of ethics
- Specific standards of conduct

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AITP Code of Ethics

- Obligation to
 - ◆ Management: understanding of methods
 - ◆ Fellow members: honesty and respect
 - ◆ Society: dissemination and understanding
 - ◆ University: uphold ethical principles
 - ◆ Employer: guard employer's interests
 - ◆ Country: citizenship

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AITP Standards of Conduct

- Broken down by previous obligations
- Not objectives, but rules that no true professional will violate

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ACM Code of Ethics

- www.acm.org/constitution/code.html
- General moral imperatives
- Specific professional responsibilities
- Organizational leadership imperatives
- Compliance with the code

ACM: General Moral Imperatives

1. Contribute to society and human well-being
2. Avoid harm to others
3. Be honest and trustworthy
4. Be fair and take action not to discriminate
5. Honor property rights including copyrights and patents

ACM: General Moral Imperatives

6. Give proper credit for intellectual property.
7. Respect the privacy of others.
8. Honor confidentiality.

ACM: Specific Professional Responsibilities

1. Strive to achieve the highest quality, effectiveness and dignity in both the process and products of professional work.
2. Acquire and maintain professional competence.
3. Know and respect existing laws pertaining to professional work.

ACM: Specific Professional Responsibilities

4. Accept and provide appropriate professional review.
5. Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.
6. Honor contracts, agreements, and assigned responsibilities.

ACM: Specific Professional Responsibilities

7. Improve public understanding of computing and its consequences.
8. Access computing and communication resources only when authorized to do so.

ACM: Organizational Leadership Imperatives

1. Articulates social responsibilities of members of an organizational unit and encourage full acceptance of those responsibilities.
2. Manage personnel and resources to design and build information systems that enhance the quality of working life.

ACM: Organizational Leadership Imperatives

3. Acknowledge and support proper and authorized uses of an organization's computing and communication resources.
4. Ensure that users and those who will be affected by a system have their needs clearly articulated during the assessment and design of requirements; later the system must be validated to meet requirements.

ACM: Organizational Leadership Imperatives

5. Articulate and support policies that protect the dignity of users and others affected by a computing system.
6. Create opportunities for members of the organization to learn the principles and limitations of computer systems.

ACM: Compliance with the Code

1. Uphold and promote the principles of this Code.
2. Treat violations of this code as inconsistent with membership in the ACM.

Software Engineering Code of Ethics

- www.acm.org/serving/se/code.htm
- Eight principles
 - ◆ Public
 - ◆ Client and Employer
 - ◆ Product
 - ◆ Judgment
 - ◆ Management
 - ◆ Profession
 - ◆ Colleagues
 - ◆ Self
- Licensing

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IEEE Code of Ethics

- <http://www.ieee.org/about/whatis/code.html>

“We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

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IEEE Code of Ethics

1. to accept responsibility in making engineering decisions consistent with the *safety, health and welfare of the public*, and to disclose promptly factors that might endanger the public or the *environment*;
2. to avoid real or perceived *conflicts of interest* whenever possible, and to disclose them to affected parties when they do exist;

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IEEE Code of Ethics

3. to be *honest and realistic* in stating claims or estimates based on available data;
4. to *reject bribery* in all its forms;
5. to *improve the understanding* of technology, its appropriate application, and potential consequences;

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IEEE Code of Ethics

6. to maintain and improve our technical *competence* and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer *honest criticism* of technical work, to acknowledge and correct errors, and to *credit properly* the contributions of others;

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IEEE Code of Ethics

8. to *treat fairly* all persons regardless of such factors as race, religion, gender, disability, age, or national origin;
9. to *avoid injuring others*, their property, reputation, or employment by false or malicious action;
10. to *assist colleagues* and co-workers in their professional development and to support them in following this code of ethics.”

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NSPE Code of Ethics

- www.nspe.org/ethics
- Six Fundamental Canons
- Five Rules of Practice with subparts
- Nine Professional Obligations with subparts
- Engineer's Creed
- Ethics cases

Differences from Other Codes

- American Medical Association's (AMA) *Principles of Medical Ethics*
- American Psychological Association's (APA) *Ethical Principles of Psychologists*

Differences: Nondiscrimination

- ACM and IEEE include race, gender, religion, disability, age, national origin
- ACM adds “or others such factors”
- AMA adds “sexual orientation”
- APA adds “sexual preference”
- SE mentions “irrelevant prejudices”
- AITP and NSPE codes are not explicit about discrimination issues

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Differences: Correcting Laws

- APA and AMA explicitly promote working toward changing laws not beneficial to society
- ACM balances compliance with challenging inappropriate laws
- IEEE, AITP, SE and NSPE: no mention
- Should we work for beneficial change?

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Differences:Charity

- AMAandAPApromotesocial responsibilityandcharity
- NSPEalsopromoteswell -beingofsociety
- SEmentionsvolunteeringskillsand contributingtoeducation
- ACM,AITPandIEEE:nomention
- Manygraduateswillearnmorethanhalfthe familiesintheU.S.!

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Differences:Incompetence

- AMAandAPApromoteexposingincompetence, fraudanddeception
- NSPEandAITPpromoteexposingunethicalor illegalpractices
- ACM,SEandIEEE:littleemphasis
- Issueslessimportantforcomputingprofessionals?
- Shouldwefeelresponsibilitytoexpose incompetence,fraudanddeception?

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Differences: Misinformation

- AMA and APA discourage allowing misleading results
- ACM, IEEE, AITP, SE and NSPE: little emphasis
- Is misinformation a big issue in the computing profession?

Problems with Codes of Ethics

- Not all -encompassing
- Little penalty for non -compliance
- Goodness cannot be defined by a list of rules
- Requires reliance on Personal Code of Ethics

Case Study: Conflict of Interest

- University of Texas Space Institute (UTSI)
- Walter Frost, professor at UTSI
 - ◆ Successful at winning NASA contracts
 - ◆ Founded FWG for -profit company
- Similar contracts now going to FWG
- Engineers from NASA pursued degrees from UTSI under Frost
 - ◆ Influential in contract decisions
 - ◆ These similar to technical reports of Frost

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Case Study: Results

- UTSI student blows whistle on plagiarism
- Frost takes early retirement from UTSI
- Students stripped of UTSI degree and demoted at NASA
- Who is at fault?
 - ◆ Frost?
 - ◆ Students?
 - ◆ UTSI?
 - ◆ NASA?

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Points to Remember

- Major professional organizations have their own Code of Ethics
- Codes agree on general principles
- Codes address most ethical dilemmas confronted as a professional
- Professional codes not always directly applicable in specific situations
 - ◆ Must rely on Personal Code of Ethics

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Applying the ACM Code

- “Using the New ACM Code of Ethics in Decision Making,” *Communications of the ACM*, 1993.
- Case 1: Intellectual Property
 - ◆ Jean uses segments of source code from coworker and commercial product in her own work without acknowledgement
- Ethical?
- ACM Code: 1.3, 1.5, 1.6, 2.3

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Applying the ACM Code

- Case 2: Privacy
 - ◆ Diane is building a database for an insurance company to hold sensitive data
 - ◆ Company decides on less security than Diane recommends
- Should Diane continue with the project?
- ACM Code: 1.7, 1.8, 2.6, 2.7, 3.4, 3.5

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Applying the ACM Code

- Case 3: Confidentiality
 - ◆ Max downloads sensitive data for his work in department of alcoholism and drug abuse
 - ◆ Takes data home to work
- Is either action ethical for Max?
- Is the company acting ethically?
- ACM Code: 1.7, 1.8, 2.8, 3.3, 3.5

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Applying the ACM Code

- Case 3: Quality in Professional Work
 - ◆ Company designs new accounting system for government agency
 - ◆ Once installed, system interface too difficult to use, and system is abandoned
- Who wasted taxpayers money?
- Ethical?
- ACM code: 2.1, 2.4, 3.4

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Applying the ACM Code

- Case 5: Fairness and Discrimination
 - ◆ Client wants white, male applicants displayed first in employment matching application
- What should you do?
- ACM code: 1.1, 1.2, 1.4, 2.3, 2.5, 4.1

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ApplyingACMCode

- Case6:LiabilityforUnreliability
 - ◆ Softwarecompanyreleasestaxsoftware withknownbugs,butaddsdisclaimer
 - ◆ Version1.0;industrypolicy
- Ethical?
- ACMcode:2.1,2.3,2.5,3.1

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ApplyingtheACMCode

- Case7:SoftwareRisks
 - ◆ Janeisbeingpressuredtosignoffonan inventorycontrolsystemshefeelsisnot sufficientlytested,butpasses requirements
- Shouldsheapprovethe system?
- ACMcode:1.1,1.2,1.3,2.1

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Applying the ACM Code

- Case 8: Conflict of Interest
 - ◆ Consultant recommends a traffic control system from a company in which he is a major stockholder
- Ethical?
- ACM code: 1.3, 2.5

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Applying the ACM Code

- Case 9: Unauthorized Access
 - ◆ Joe needs more computing resources to complete his class project
 - ◆ Uses knowledge gained from system administration experience to increase his quotas
 - ◆ Joe is a student member of ACM
- Ethical?
- ACM code: 1.5, 2.3, 2.8

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