

# **Ethics in Engineering and Research**

## Lecture #3

### **Ethical Dilemmas, Choices and Codes of Ethics**

Prepared by  
Asst. Prof. Chen Qingsha (version 1)

Modified by  
Assoc. Prof. Aung Ko Ko Kyaw (version 2)

Department of Electrical and Electronic Engineering, SUSTech

# Resolving Moral Dilemmas

## 1. Moral clarity

- Need to know something is wrong! *Do not ignore problems!*
- Loyalty to employer, responsibilities to public and environment (and complex relations between these)

## 2. Know the facts

- Get hard, documented facts, discuss with others
- Competence matters in gathering technical facts

## 3. Consider options

- Diversity of actions to take? Evaluate/discuss.
- Long-term, short-term perspectives, repercussions?
- “Creative middle solution”? (unwelcome) unintended consequence

## 4. Make a reasonable decision

- Weigh all factors, recognize “gray areas”/compromises
- An engineering design problem?



# NSPE, BER Case 96-4

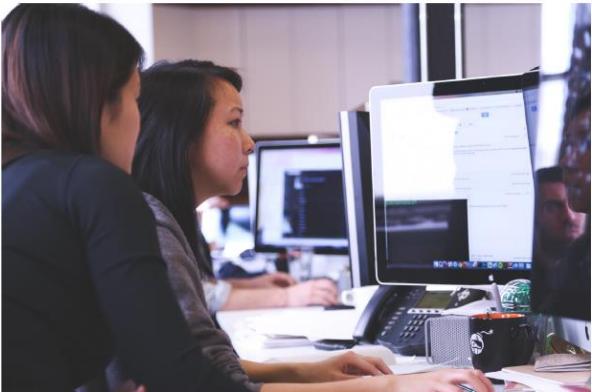
- Engineer A is employed by a software company and is involved in the design of specialized software in connection with the operations of facilities affecting the public health and safety (i.e., nuclear, air quality control, water quality control). As the part of the design of a particular software system, Engineer A conducts extensive testing and although the tests demonstrate...



that the software is safe to use under existing standards, Engineer A is aware of new draft standards that are about to be released by a standard setting organization-standards which the newly designed software may not meet. Testing is extremely costly and the company's clients are eager to begin to move forward. The software company is eager to satisfy its clients, protect the software company's finances, and protect...



...existing jobs; but at the same time, the management of the software company wants to be sure that the software is safe to use. A series of tests proposed by Engineer A will likely result in a decision whether to move forward with the use of the software. The tests are costly and will delay the use of the software by at least six months, which will put the company at a competitive...



...disadvantage and cost the company a significant amount of money. Also, delaying implementation will mean the state public service commission utility rates will rise significantly during this time. The company requests Engineer A's recommendation concerning the need for additional software testing.

**Question: Should Engineer A design the software to meet the new standards?**



# Analyzing the case...

- Moral clarity:
  - What is wrong? What is the core issue/question?
  - Will the software meet the new standards?
  - Why are there new standards?
    - Experience shows new failure modes
    - New tests designed to test new failure modes
  - Engineer's role in new standards?
    - Development of new standards
    - Following new standards

# Analyzing the case, continued...

- Know the facts
  - It is critical software (health/safety of public)
  - New standards to test new failure modes (that you need to understand)
  - Testing is costly, company finances at stake
  - Need to protect existing jobs
  - Testing will delay release by > 6 months
  - Testing will hurt competitive advantage?
  - Utility rates will rise

# Analyzing the case, continued...

- Consider options
  - Option 1: Ignore the new tests, take risk to public safety/welfare, save time/money
  - Option 2: Conduct the tests, risk jobs, hurt finances, become certain software will work, protect safety/welfare of the public
  - Option 3: Creative middle of the road solution: Is there a limited version of full tests that could be conducted that would partially test, but save some money/time?

# Analyzing the case, continued

- Make a reasonable decision
  - Pick Option 2 since safety/health/welfare of the public is paramount
  - If company says no, pick Option 3 and try to do a limited test for the failure mode (**your competence in coming up with an economical test is critical here**). In this option, all constraints considered, you *try* to protect the safety, health, and welfare of the public

# Resolving moral dilemmas, “line-drawing”

- Harris et al. idea to try to make solving moral dilemmas more analytical/quantitative
- Given moral dilemma
  - Establish key features, issues
  - Establish extremes of features/issues and paradigms (indicating totally ethical vs. clearly unethical aspects)
  - Construct a line drawing (see below)
  - Evaluate “test case” (your current moral dilemma)

# Line-drawing, bribery example (Harris et al.)

- Victor is an engineer in a large construction firm. He has been assigned the task of being the sole person to recommend rivets for the construction of a large apartment building. After some research and testing, he decides to recommend ACME rivets for the job, which he determines are of the lowest cost and highest quality. On the day after Victor's decision was made, an ACME representative visits him and gives him a voucher for an all-expense-paid trip to the annual ACME Technical Forum, which meets in Jamaica. The trip will have considerable educational value, but will also provide day trips to the beach and other points of interest. **Question: If Victor accepts, has he been bribed?**

# Line-drawing, bribery example (Harris et al.)

Feature	Paradigm (bribery)	Test case	Paradigm (not bribery)
Gift size	Large	--- <u>X</u> -----	Small (<\$1)
Timing	Before decision	----- <u>X</u> ---	After decision
Reason	Personal gain	-----X-----	Educational
Responsibility	Sole	-- <u>X</u> -----	None
Product quality	Worst	-----X---	Best
Product cost	Highest	---X-----	Lowest

X – test case feature evaluation, X important issue

Do you see a “creative middle solution”?

What about affect on future decisions on ACME?

What is company policy? Is there an *appearance* of bribery?

May not be a bribe, but still may not be a good idea!

# Codes of Ethics

- Why are codes important?
  - Serve and protect the public
  - Guidance/support for engineers
  - Inspiration, deterrence, discipline
  - Shared standards, education, mutual understanding
  - Profession's image
- Limitations of codes
  - Too vague to be useful in every day ethical decision-making?
  - Impossible to cover all eventualities



# National Society of Professional Engineers (NSPE)

- Code of Ethics for Engineers
- Preamble: Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality,



- fairness, and equity and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.



# Fundamental Canons

more important than anything else

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

# “Hold paramount the safety, health, and welfare of the public”

- How to assess impact on human safety, health, and “welfare”?
- Amartya Sen uses a “capabilities approach:”
  - Being able to live a long life in health
  - Being able to get an education, being able to work
  - Being able to have freedom of expression and association
  - Others...
- Lack of welfare=capability deprivation
- Note: It does not say the engineer should be encouraged to focus on (even extreme) capability deprivation. Should it?

What is your research focus? How does it related to "welfare"?



Also...

- Rules of Practice
- Professional Obligations



## *Code of Ethics for Engineers*

### **Preamble**

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

### **I. Fundamental Canons**

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

### **II. Rules of Practice**

1. Engineers shall hold paramount the safety, health, and welfare of the public.
  - a. If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.
  - b. Engineers shall approve only those engineering documents that are in conformity with applicable standards.
  - c. Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized or required by law or this Code.
  - d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.
  - e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
  - f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in publishing such information or assistance as may be required.
2. Engineers shall perform services only in the areas of their competence.
  - a. Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.
  - b. Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.
  - c. Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.
3. Engineers shall issue public statements only in an objective and truthful manner.
  - a. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.
  - b. Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
  - c. Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matter.
4. Engineers shall act for each employer or client as faithful agents or trustees.
  - a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
  - b. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services

pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.

- c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
- d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
- e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.
5. Engineers shall avoid deceptive acts.
  - a. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint venturers, or past accomplishments.
  - b. Engineers shall not offer, give, solicit, or receive, either directly or indirectly, any contribution to influence the award of a contract by public authority, or which may be reasonably construed by the public as having the effect or intent of influencing the awarding of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

### **III. Professional Obligations**

1. Engineers shall be guided in all their relations by the highest standards of honesty and integrity.
  - a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
  - b. Engineers shall advise their clients or employers when they believe a project will not be successful.
  - c. Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers.
  - d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
  - e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.
2. Engineers shall at all times strive to serve the public interest.
  - a. Engineers shall seek opportunities to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
  - b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.
  - c. Engineers shall endeavor to extend public knowledge and appreciation of engineering and its achievements.
3. Engineers shall avoid all conduct or practice that deceives the public.
  - a. Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.
  - b. Consistent with the foregoing, engineers may advertise for recruitment of personnel.
  - c. Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.
4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.
  - a. Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the engineer has gained particular and specialized knowledge.

- b. Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the engineer has gained particular specialized knowledge on behalf of a former client or employer.
- 5. Engineers shall not be influenced in their professional duties by conflicting interests.
  - a. Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.
  - b. Engineers shall not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or employers of the engineer in connection with work for which the engineer is responsible.
- 6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.
  - a. Engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised.
  - b. Engineers in salaried positions shall accept part-time engineering work only to the extent consistent with policies of the employer and in accordance with ethical considerations.
  - c. Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.
- 7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.
  - a. Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.
  - b. Engineers in governmental, industrial, or educational employ are entitled to review and evaluate the work of other engineers when so required by their employment duties.
  - c. Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.
- 8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.
  - a. Engineers shall conform with state registration laws in the practice of engineering.
  - b. Engineers shall not use association with a nonengineer, a corporation, or partnership as a "cloak" for unethical acts.
- 9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.
  - a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.

- b. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission.
- c. Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.
- d. Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. The employer should indemnify the engineer for use of the information for any purpose other than the original purpose.
- e. Engineers shall continue their professional development throughout their careers and should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminars.

As Revised January 2003

*"By order of the United States District Court for the District of Columbia, former Section 11(c) of the NSPE Code of Ethics prohibiting competitive bidding, and all policy statements, opinions, rulings or other guidelines interpreting its scope, have been rescinded as unlawfully interfering with the legal right of engineers, protected under the antitrust laws, to provide price information to prospective clients; accordingly, nothing contained in the NSPE Code of Ethics, policy statements, opinions, rulings or other guidelines prohibits the submission of price quotations or competitive bids for engineering services at any time or in any amount."*

#### *Statement by NSPE Executive Committee*

In order to correct misunderstandings which have been indicated in some instances since the issuance of the Supreme Court decision and the entry of the Final Judgment, it is noted that in its decision of April 25, 1978, the Supreme Court of the United States declared: "The Sherman Act does not require competitive bidding."

It is further noted that as made clear in the Supreme Court decision:

1. Engineers and firms may individually refuse to bid for engineering services.
2. Clients are not required to seek bids for engineering services.
3. Federal, state, and local laws governing procedures to procure engineering services are not affected, and remain in full force and effect.
4. State societies and local chapters are free to actively and aggressively seek legislation for professional selection and negotiation procedures by public agencies.
5. State registration board rules of professional conduct, including rules prohibiting competitive bidding for engineering services, are not affected and remain in full force and effect. State registration boards with authority to adopt rules of professional conduct may adopt rules governing procedures to obtain engineering services.
6. As noted by the Supreme Court, "nothing in the judgment prevents NSPE and its members from attempting to influence governmental action . . ."

#### **Note:**

In regard to the question of application of the Code to corporations vis-a-vis real persons, business form or type should not negate nor influence conformance of individuals to the Code. The Code deals with professional services, which services must be performed by real persons. Real persons in turn establish and implement policies within business structures. The Code is clearly written to apply to the Engineer, and it is incumbent on members of NSPE to endeavor to live up to its provisions. This applies to all pertinent sections of the Code.



1420 King Street  
Alexandria, Virginia 22314-2794  
703/684-2800 • Fax: 703/836-4875  
[www.nspe.org](http://www.nspe.org)

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- Several pages long...
- Consider a shorter code...

# IEEE Code of Ethics

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:

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;

**Concern:** “Disclose” phrase nice, but “**consistent**” vs. ABET (NSPE), “engineers shall hold **paramount** the safety, health, and welfare”... is a weaker statement? What does “consistent” even mean?

\*1997 ver.

2. To avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;

Example: Ownership in a supplier's company

3. To be honest and realistic in stating claims or estimates based on available data;

Examples: When dishonest claims give you an advantage over a competitor, or when unrealistic claims endanger individuals

#### 4. To reject bribery in all its forms;



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Example: Supplier gifts, when are they big enough to constitute a bribe? Video

5\*.To improve the understanding of technology, its appropriate application, and potential consequences;

Examples: Importance of teaching youth about engineering, importance of publishing engineering results in IEEE publications

\*1997 ver.

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;

Example: A coop student who took on task that affected safety on a manufacturing line

7. To seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;

Note: Important to keep an emotional separation to your work so that when it is criticized you do not take it personally

8. To treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin;

Note: There are certainly still problems in industry with these issues. We will discuss this more later.

9. To avoid injuring others, their property, reputation, or employment by false or malicious action;

Example: Speaking poorly of someone's project results when it is not true

10. To assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

Example: If you are a manager or a supervisor, giving them opportunities for professional development e.g., taking courses [including this course] or attending a conference

# Critique the code...

- You have **moral autonomy** - do not take it as given - challenge it! Demand that right!
- Some problems: “paramount” vs “consistent” discussed earlier
  - Too Short! Compare to NSPE, ASCE, ASME...
  - Leaves out possibility of much education/guidance by reading it.
  - Omissions? Yes! Consider our earlier definitions of professionalism that lead others to put in statements on “public service”... What does it mean? How? Each profession may have similar but different view----->

# Relevant portions of IEEE Code of Ethics

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: ...

5. *To improve the understanding of technology, its appropriate application, and potential consequences;*

# National Society of Professional Engineers (NSPE)

- III. 2. A. Engineers shall seek opportunities to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
- This is THE code for the professional engineer!

# American Society of Civil Engineers (ASCE), Code

- Canon 1(e) says “Engineers should seek opportunities to be of constructive service in civic affairs and work for the advancement of the safety, health and well-being of their communities, ...”.

# Software Engineering Code of Ethics and Professional Practice

- ACM/IEEE-CS Joint task force on software engineering ethics and professional practices
- Principle 1: Public: “...software engineers shall, as appropriate:
  - 1.08. Be encouraged to volunteer professional skills to good causes and contribute to public education concerning the discipline.

# American Medical Association (AMA), Principles of Medical Ethics (June 2001)

Section VII: A physician shall recognize a responsibility to participate in activities contributing to the improvement of the community and the betterment of public health

- Section VII: A physician shall recognize a responsibility to participate in activities contributing to the improvement of the community and the betterment of public health.

For example: Free clinics, “Doctors Without Borders”

# American Bar Association (ABA), Model Rules of Professional Conduct, ABA 2003

- Rule 6.1: Voluntary Pro Bono Publico Service: “... Every lawyer has a professional responsibility to provide legal services to those unable to pay. A lawyer should aspire to render at least (50) hours of pro bono publico legal services per year.”

# The 1979 IEEE Code of Ethics

- Article IV: Members shall, in fulfilling their responsibilities to the community:
  1. Protect the safety, health, and welfare of the public and speak out against abuses in these areas affecting the public interest;
  2. *Contribute professional advice, as appropriate, to civic, charitable or other nonprofit organizations;*
  3. Seek to extend public knowledge and appreciation of the profession and its achievements

IEEE destroyed a key aspect of the spirit of professionalism with their 1990 revision/shortening of the 1979 code

# Social justice perspectives

- “Hold paramount the safety, health, and welfare of the public, **and encourage engineers to focus on improving the worst safety, health, and welfare problems**”? Add this better?
- Paid, or gratuitous, engineering with this goal:
  - Catholic: “preferential option for the poor” demands special attention for poor, and demands that everyone contribute to the “common good”
  - Jewish/Muslim: Views on charity (which in some cases can be service, not money)
  - Rawls: “Difference Principle” as it applies to a state’s institutions, “inequalities are only allowed that will reduce inequalities”
  - Sen: Broad view of how to focus on promoting justices and avoiding injustices

# Individual obligations to serve vs. a profession's encouragement to serve

- Does an engineer have an obligation to serve humanity (e.g., for free)?
- Does an engineer have an obligation (even in paid employment) to help with the worst cases of capability deprivation?
- Are such obligations “duties” (certainly, engineers should not be coerced in any way to do these things)?
- If individuals do not have an obligation, does the profession *as a whole*? In connection with this, should engineering profession's codes of ethics “encourage” engineers to do these things (or “aspire” to doing these things)? Not a requirement that any one engineer does these things.

In Jan. 2018, IEEE revised Code of Ethics  
(edits to Canons 1 and 5)

1. to hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices, and to disclose promptly factors that might endanger the public or the environment;
  
5. to improve the understanding by individuals and society of the capabilities and societal implications of conventional and emerging technologies, including intelligent systems;

## 7.8 IEEE Code of Ethics

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:

1. to hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices, 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;
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 by individuals and society of the capabilities and societal implications of conventional and emerging technologies, including intelligent systems;
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;
8. to treat fairly all persons and to not engage in acts of discrimination based on race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;
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.