



BIGDATA
FOR **DEVELOPMENT**
Network



Ethics and Human Rights Guidelines for *Big Data* for *Development Research* #4

Review of Existing Codes of Ethics for Big Data and Artificial Intelligence

Extended Notes | April 2020

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1. Normative Ethical Concerns

1.1 Utilitarianism

Utilitarianism is the most consistent ethical norm ingrained in the ethical codes reviewed in this study and accordingly warrants a detailed perusal of its definitional aspects. Bentham and Mill are the ones who define classical utilitarianism.¹ Popper among others is the torch bearers of its various forms.² Utilitarianism entails maximum happiness for maximum people.³ Its various forms may delve into reducing harm,⁴ introducing a hierarchy of pain and pleasure,⁵ their intensity and even consider the happiness of other living beings in addition to the human kind.⁶ Utilitarianism envisages acts and rules be gauged per a utilitarian calculus where the good and bad are weighed on a scale.⁷

Utilitarianism is criticized for its ability to justify the violation of even non-derogable human rights in the interest of the majority. Further, it decouples the moral worth of acts from the moral worth of persons, consequently sometimes legitimizing the well-being of a minority being sacrificed for a greater overall happiness.⁸

The major drawback of this approach is the ambiguity and biases inherent in trying to identify and quantify both the pros and cons as certain issues may be afforded more weight than others by those performing the analysis.

¹ Bentham, J. (1983). Deontology; together with a table of the springs of action; and the article on utilitarianism.

² Popper, K. (2012). The open society and its enemies. Routledge; See also Popper, K. (2014). After the open society: Selected social and political writings. Routledge.

³ Fogel, R. W. (2000). The fourth great awakening and the future of egalitarianism. University of Chicago Press, p.56.

⁴ Crimmins, J. E. (2015). Jeremy Bentham, pp. 45-48.

⁵ Szasz, T. (1988). Pain and pleasure: A study of bodily feelings. Syracuse University Press, p.57.

⁶ Ahmed, S. (2010). The promise of happiness. Duke University Press, p. 62.

⁷ Lelkes, O. (2013). Minimising misery: a new strategy for public policies instead of maximising happiness?. Social indicators research, 114(1), 121-137.

⁸ Vallor, S. (2017) Technology and the Virtues: A philosophical guide for a future worth wanting, New York, Oxford University Press, p.23.

Although utilitarianism as a theory is practical and practiced *de-facto* yet it is against the accepted egalitarian societal norms of equality and minority rights.⁹

The underlying assumption of utilitarianism is that results or consequences are important and intent is less relevant. To consistently select the choice that gives the maximum amount of overall happiness for the group than most individual happiness, the perspective must be that of a benevolent, disinterested spectator.

1.2. Consequentialism

This ethical theory entails that the end result of the act must be ethical. Ends justify means and the negative consequences should be avoided and when faced redressed actively.¹⁰ Inclusion of such a principle in ethical codes will benefit the society as herein an action (development of an A.I.) will or should be permitted or done only when the action would lead to an ethical consequence.

This consequentialist imagination prevents data practitioners from indulging in immoral actions. In Consequential Ethics, the outcomes determine the morality of the act. What makes the act wrong are the consequences. So the essence of morality is determined by the result or outcome of the act. *Act consequentialism* is the claim that an act is morally right if and only if that act maximizes the good, that is, if and only if the total amount of good for all minus the total amount of bad for all is greater than this net amount for any incompatible act available to the agent on that occasion.¹¹

Though classical consequentialism may seem simplistic owing to reduction of all morally relevant claims to consequences, yet it ought to be pointed out that its functional aspects encompass a complex combination of considerations¹² like its

⁹ Stein, M. S. (2008). Distributive justice and disability: Utilitarianism against egalitarianism. Yale University Press, p. 46.

¹⁰ Scheffler, S. (Ed.). (1988). Consequentialism and its Critics. Oxford University Press on Demand, pp.172-186.

¹¹ Moore, G. E., 1912. Ethics, New York: Oxford University Press. See also Moore, G. E.,1903. Principia Ethica, Cambridge: Cambridge University Press.

¹² Kagan, S., 1989. *The Limits of Morality*, Oxford: Clarendon Press, pp. 17-22.

dependence on consequences,¹³ their actuality,¹⁴ directness,¹⁵ aggregate,¹⁶ universality,¹⁷ equality of consideration,¹⁸ agent neutrality¹⁹ et al.

Pertinent drawbacks of consequentialism includes subjectivity, owing to agent neutrality,²⁰ and relativity,²¹ and the scope for violation of minority rights.

1.3. Difference between Utilitarianism and Consequentialism

Consequentialism evaluates actions by weighing the consequences of the action against a desired outcome. Utilitarianism is a consequentialist moral theory where the desired outcome is 'the greatest amount of good possible'. Thus, the difference is that consequentialism *does not specify a desired outcome* while utilitarianism *specifies good as the desired outcome*, Utilitarianism, on the other hand is seen to combine consequentialism with different assumptions: Hedonia assumes that *pleasure* alone has intrinsic value. Eudaimonia assumes that *happiness* (welfare, well-being) alone has intrinsic value (Mautner).

Utilitarianism judges the moral value of an action according to its *actual* consequences. Consequentialism judges the moral value of an action by considering its *foreseen* consequences. This means that in consequentialism, an agent's intent of an action is not morally relevant if an action has possible foreseeable consequences that do not maximise the desired outcome, then the action is morally wrong irrespective of the agent's intention. In Mill's utilitarianism however, there is a

¹³ Id. (As opposed to the circumstances or the intrinsic nature of the act or anything that happens before the act).

¹⁴ Id. (Whether an act is morally right depends only on the *actual* consequences, as opposed to foreseen, foreseeable, intended, or likely consequences).

¹⁵ Id. (Whether an act is morally right depends only on the consequences of *that act itself*, as opposed to the consequences of the agent's motive, of a rule or practice that covers other acts of the same kind, and so on).

¹⁶ Id. (Which consequences are best is some function of the values of *parts* of those consequences, as opposed to rankings of whole worlds or sets of consequences).

¹⁷ Id. (Moral rightness depends on the consequences for *all* people or sentient beings, as opposed to only the individual agent, members of the individual's society, present people, or any other limited group).

¹⁸ Id. (In determining moral rightness, benefits to one person matter *just as much* as similar benefits to any other person i.e. all who count count equally)

¹⁹ Id. (Whether some consequences are better than others does not depend on whether the consequences are evaluated from the perspective of the agent, as opposed to an observer).

²⁰ Ross, W. D., 1930. *The Right and the Good*, Oxford: Clarendon Press, pp. 34-35.

²¹ Bennett, J., 1989. "Two Departures from Consequentialism", *Ethics*, 100: 54-66.

distinction between the morality of the *action* and the morality of the *agent*. The actual consequences of an action determine the action's morality, while this has no implications on the agent's morality.

1.4. Kantianism

Kantianism pertains to the thoughts contained in the writings of Immanuel Kant or those inspired from his writings.²²

Kant was against the idea of morality subsumed in the laws of the church and purported that the supreme principle of morality is a standard of rationality or what he called the "Categorical Imperative". Kant categorized the Categorical Imperative as an objective, rationally necessary and unconditional principle that we must always follow irrespective of any natural desires or inclinations we may have to the contrary.

The Humanity Formulation of the Categorical Imperative entails that that we should never act in such a way that we treat humanity, whether in ourselves or in others, as a means only but always as an end in itself.²³

1.5. Deontology

Deontology pertains that the morality of an action should be based on whether that action itself is right or wrong under a series of rules, rather than based on the consequences of the action. Thus, deontological ethics place special emphasis on the relationship between duty and the morality of human actions. The term *deontology* is derived from the Greek *deon*, "duty," and *logos*, "science."²⁴

The international emphasis on protecting human rights and thus on the duty not to violate them can also be seen as a triumph for deontological ethics.²⁵

²² Secker, B. (1999). The appearance of Kant's deontology in contemporary Kantianism: Concepts of patient autonomy in bioethics. *The Journal of medicine and philosophy*, 24(1), 43-66.

²³ Darwall, Stephen, 1985, "Kantian Practical Reason Defended," *Ethics*, 96: 89-99.

²⁴ The Editors of Encyclopedia Britannica, Deontological ethics, (Mar 8, 2019), Retrieved from <https://www.britannica.com/topic/deontological-ethics>.

²⁵ Id.

Deontological ethics holds that at least some acts are morally obligatory regardless of their consequences for human welfare. This removes scope for subjectivity in application of the theory in practice. Descriptive of such ethics are such expressions as “Duty for duty’s sake,” “Virtue is its own reward,” and “Let justice be done though the heavens fall.”

To understand its shortcomings consider you are a software engineer and learn that a nuclear missile is about to launch that might start a war. You can hack the network and cancel the launch, but it’s against your professional code of ethics to break into any software system without permission.²⁶ And, it’s a form of lying and cheating. Deontology advises not to violate this rule. However, in letting the missile launch, thousands of people will die.

1.6. Differences between Kantianism and Deontology

Kant’s theory of ethics is deontological because it considers an action to be morally right if it stems from a person’s duty (to ‘act out of respect for the moral law’). That is, the morality of an action is determined by the intent of the agent carrying it out, not the consequence of the action itself. According to Kant, if the agent’s intent for the action passes the categorical imperative, it is said to be morally right. The categorical imperative primarily focuses on treating humans as ends in themselves and not merely as means.

Other forms of deontology include those where the ‘set of rules’ that the action must abide by are different from the ‘categorical imperative’ as framed by Kant. An example of this is Divine Command Theory, where the morality of an action is determined by whether it has been commanded by god. It is deontological because morality is duty-based rather than consequence-based. It is different from Kant’s theory of ethics because it need not pass the categorical imperative test.

²⁶ Ethics Unwrapped, Deontology, University of Texas, Retrieved from <https://ethicsunwrapped.utexas.edu/glossary/deontology>.

2. Broad Conclusions

2.1. Consistency with Utilitarianism

Out of the eighteen Ethical Codes of Conducts examined, eight of them²⁷ had a broadly Utilitarian approach. We will look at each of them in some detail below.

1. Asilomar Principles

- *“14) Shared Benefit: AI technologies should benefit and empower as many people as possible.”²⁸*
- *15) Shared Prosperity: The economic prosperity created by AI should be shared broadly, to benefit all of humanity.*
- *23) Common Good: Superintelligence should only be developed in the service of widely shared ethical ideals, and for the benefit of all humanity rather than one state or organization.*

This is in line with the utilitarian ideology of maximum happiness for maximum people.²⁹

2. Google AI Principles,

- *“1. Be socially beneficial. The expanded reach of new technologies increasingly touches society as a whole. Advances in AI will have transformative impacts in a wide range of fields, including healthcare, security, energy, transportation, manufacturing, and entertainment. As we consider potential development and uses of AI technologies, we will take into account a broad range of social and economic factors, and **will***

²⁷ Asilomar AI Principles, Principle 14; Google AI principles, Objective 1 Be socially beneficial; ACM Code of Ethics Section 1.1 and 1.2; Global Data Ethics Principles, FORTS Framework, Social Benefit; EU General Data Protection Regulation permits collection of sensitive data for public good; IAB Ethics and the Internet Policy Statement, Point (c) and; ASA Ethical Guidelines for Statistical Practice, Purpose of the Guidelines.

²⁸ Asilomar AI Principles, Principle 14.

²⁹ Fogel, R. W. (2000). *The fourth great awakening and the future of egalitarianism*. University of Chicago Press, p.56.

proceed where we believe that the overall likely benefits substantially exceed the foreseeable risks and downsides.” (Emphasis supplied).

The Google AI Principles aligns with the utilitarian approach wherein acts and rules are gauged per a utilitarian calculus and the good and the bad are weighed on a scale and the actions are only pursued if the good triumphs.³⁰

3. ACM Code of Ethics,

“1. GENERAL ETHICAL PRINCIPLES.

A computing professional should...

1.1 Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing.

This principle, which concerns the quality of life of all people, affirms an obligation of computing professionals, both individually and collectively, to use their skills for the benefit of society, its members, and the environment surrounding them. This obligation includes promoting fundamental human rights and protecting each individual’s right to autonomy. An essential aim of computing professionals is to minimize negative consequences of computing, including threats to health, safety, personal security, and privacy. When the interests of multiple groups conflict, the needs of those less advantaged should be given increased attention and priority.

Computing professionals should consider whether the results of their efforts will respect diversity, will be used in socially responsible ways, will meet social needs, and will be broadly accessible. They are encouraged to actively contribute to society by engaging in pro bono or volunteer work that benefits the public good. In addition to a safe social environment, human well-being requires a safe natural environment. Therefore,

³⁰ Lelkes, O. (2013). Minimising misery: a new strategy for public policies instead of maximising happiness?. *Social indicators research*, 114(1), 121-137.

computing professionals should promote environmental sustainability both locally and globally.

1.2 Avoid harm.

In this document, “harm” means negative consequences, especially when those consequences are significant and unjust. Examples of harm include unjustified physical or mental injury, unjustified destruction or disclosure of information, and unjustified damage to property, reputation, and the environment. This list is not exhaustive.

Well-intended actions, including those that accomplish assigned duties, may lead to harm. When that harm is unintended, those responsible are obliged to undo or mitigate the harm as much as possible. Avoiding harm begins with careful consideration of potential impacts on all those affected by decisions. When harm is an intentional part of the system, those responsible are obligated to ensure that the harm is ethically justified. In either case, ensure that all harm is minimized.

To minimize the possibility of indirectly or unintentionally harming others, computing professionals should follow generally accepted best practices unless there is a compelling ethical reason to do otherwise. Additionally, the consequences of data aggregation and emergent properties of systems should be carefully analyzed. Those involved with pervasive or infrastructure systems should also consider Principle 3.7.

A computing professional has an additional obligation to report any signs of system risks that might result in harm. If leaders do not act to curtail or mitigate such risks, it may be necessary to “blow the whistle” to reduce potential harm. However, capricious or misguided reporting of risks can itself be harmful. Before reporting risks, a computing professional should carefully assess relevant aspects of the situation.”³¹

³¹ ACM Code of Ethics Section 1.1 and 1.2.

Principle 1.1 and 1.2 of the ACM Code of ethics allude towards Karl Popper's theory of Negative Utilitarianism.³²

4. Global Data Ethics Principles, FORTS Framework

“SOCIAL BENEFIT. I place people before data and am responsible for maximizing social benefit and minimizing harm. I consider the impact of my work on communities of people, other living beings, ecosystems and the world-at-large.”³³

The code conforms to the utilitarian ideal of maximizing benefits and minimizing harm.³⁴ More importantly, it goes on further and prescribes to consider the impact of ones action on not just human beings but on other living beings, ecosystems and the world-at-large.³⁵

5. IAB Ethics and the Internet Policy Statement

“The IAB strongly endorses the view of the Division Advisory Panel of the National Science Foundation Division of Network, Communications Research and Infrastructure which, in paraphrase, characterized as unethical and unacceptable any activity which purposely: (c) wastes resources (people, capacity, computer) through such actions.”³⁶

The IAB principles too purport a negative utilitarianist outlook and mandate not to waste resources or cause harm.

6. ASA Ethical Guidelines for Statistical Practice

³² Popper, K. (2012). *The open society and its enemies*. Routledge; See also Popper, K. (2014). *After the open society: Selected social and political writings*. Routledge.

³³ Global Data Ethics Principles, FORTS Framework, Social Benefit.

³⁴ *Supra* note 4.

³⁵ Ahmed, S. (2010). *The promise of happiness*. Duke University Press, p. 62.

³⁶ IAB Ethics and the Internet Policy Statement, Point (c)

“Purpose of the Guidelines, Above all, professionalism in statistical practice presumes the goal of advancing knowledge while avoiding harm; using statistics in pursuit of unethical ends is inherently unethical.”³⁷

The ASA Ethical Guidelines for Statistical Practice in very clear terms advance the utilitarian ideology of avoiding harm as one of the purposes of the guidelines.

7. IEEE Ethically Aligned Design:

“General Principle 2. Prioritize benefits to humanity and the natural environment from the use of A/IS. Note that these should not be at odds — one depends on the other. Prioritizing human well-being does not mean degrading the environment.”

IEEE Ethically Aligned Design complies with the utilitarian idea of enhancing benefits.

2.2. Consistency with Consequentialism

Out of the eighteen Ethical Codes of Conducts examined, six³⁸ of them subscribe to a Consequentialist approach.

1. The Ten Commandments of Computer Ethics.

“Commandment 9: Thou Shalt Think About The Social Consequences Of The Program You Are Writing Or The System You Are Designing.

Commandment 10: Thou Shalt Always Use A Computer In Ways That Insure Consideration And Respect For Your Fellow Humans.”

Consequentialism entails that the end result of an act must be ethical and not necessarily the means. While Commandment 9 entrusts a general duty to ponder upon the consequences of one’s act, Commandment 10 casts the specific categorical

³⁷ ASA Ethical Guidelines for Statistical Practice, Purpose of the Guidelines.

³⁸ Google AI principles, AI applications we will not pursue; Microsoft AI principles, Responsible bots guidelines; ACM Code of Ethics, Section 1.2; Ten Commandments of Computer Ethics, Commandment 9 and 10; Global Data Ethics Principles, Principle 10 and; ASA Ethical Guidelines for Statistical Practice, Preamble.

duty to ‘insure consideration and respect for your fellow humans’. Most importantly, The Ten Commandments are a set of ten defined rules which is a clear example of Rule Consequentialism.³⁹

2. Microsoft AI Principles

... In order for people and society to realize the full potential of bots, they need to be designed in such a way that they earn the trust of others. These guidelines are aimed at helping you to design a bot that builds trust in the company and service that the bot represents.”⁴⁰

The Microsoft’s Responsible bots guidelines encapsulate a fundamental expectation, i.e., earn the trust of others. This predetermined consequence is to be achieved at all times and cannot be done away with. This is akin to the ends justify means situation with the end being the trust of the others. Consequently, any act owing to which the Microsoft bots deteriorates the trust that the users invest on the bots would be unethical.

3. ACM Code of Ethics

“Avoid harm.”

Harm means negative consequences, especially when those consequences are significant and unjust. Examples of harm include unjustified physical or mental injury, unjustified destruction or disclosure of information, and unjustified damage to property, reputation, and the environment. This list is not exhaustive.

Well-intended actions, including those that accomplish assigned duties, may lead to harm. When that harm is unintended, those responsible are obliged to undo or mitigate the harm as much as possible. Avoiding harm begins with careful consideration of potential impacts on all those affected by decisions. When harm is

³⁹ Hooker, Brad. “Rule Consequentialism.” Stanford Encyclopedia of Philosophy. See also Hooker, Brad. “Rule Consequentialism.” Stanford Encyclopedia of Philosophy.

⁴⁰ Microsoft AI principles, Responsible bots guidelines.

an intentional part of the system, those responsible are obligated to ensure that the harm is ethically justified. In either case, ensure that all harm is minimized.

To minimize the possibility of indirectly or unintentionally harming others, computing professionals should follow generally accepted best practices unless there is a compelling ethical reason to do otherwise. Additionally, the consequences of data aggregation and emergent properties of systems should be carefully analyzed. Those involved with pervasive or infrastructure systems should also consider Principle 3.7.

A computing professional has an additional obligation to report any signs of system risks that might result in harm. If leaders do not act to curtail or mitigate such risks, it may be necessary to “blow the whistle” to reduce potential harm. However, capricious or misguided reporting of risks can itself be harmful. Before reporting risks, a computing professional should carefully assess relevant aspects of the situation.”⁴¹

A consequentialist imagination entails that the end result of the act must be ethical. Ends justify means and the negative consequences should be avoided and when faced redressed actively.⁴² The ACM Code of Ethics not only prescribes to redress harm but also to define harm which removes a level of ambiguity in its implementation.

4. Google AI Principles

“AI applications that we will not pursue.

- *Technologies that cause or are likely to cause overall harm. Where there is a material risk of harm, we will proceed only where we believe that the benefits substantially outweigh the risks, and will incorporate appropriate safety constraints.*
- *Weapons or other technologies whose principal purpose or implementation is to cause or directly facilitate injury to people.*

⁴¹ ACM Code of Ethics, Section 1.2.

⁴² Scheffler, S. (Ed.). (1988). Consequentialism and its Critics. Oxford University Press on Demand, pp.172-186.

- *Technologies that gather or use information for surveillance violating internationally accepted norms.*
- *Technologies whose purpose contravenes widely accepted principles of international law and human rights.*⁴³

Google while defining its AI principles relied on a consequentialist approach to determine what consequences it does not want at all. The idea is to avoid harm or injury. Though inclusion of such ideals is commendable, what is a matter of concern is the ‘actuality’ of those consequences. Successful implementation is a major concern here.

5. Global Data Ethics Principle

*Principles 10. “Ensure that all data practitioners take responsibility for exercising ethical imagination in their work, including considering the implication of what came before and what may come after, and actively working to increase benefit and prevent harm to others.”*⁴⁴

Principle 10 of Global Data Ethics, covers multiple facets of consequentialism, not just by imagination but also mandates to consider the implications and casts the duty to actively work to increase benefit and prevent harm.⁴⁵

6. ASA Ethical Guidelines for Statistical Practice

*“The American Statistical Association’s Ethical Guidelines for Statistical Practice are intended to help statistics practitioners make decisions ethically. ... Above all, professionalism in statistical practice presumes the goal of advancing knowledge while avoiding harm.”*⁴⁶

⁴³ Google AI principles, AI applications we will not pursue.

⁴⁴ Global Data Ethics Principles, Principle 10.

⁴⁵ Moore, G. E., 1912. *Ethics*, New York: Oxford University Press. See also Moore, G. E., 1903. *Principia Ethica*, Cambridge: Cambridge University Press.

⁴⁶ ASA Ethical Guidelines for Statistical Practice, Preamble.

ASA Ethical Guidelines for Statistical Practice aligns with consequentialism by codifying the goal to enhance knowledge and avoid harm.⁴⁷

2.3. Consistency with Deontology and Kantian Ethics

If a principle violates the categorical imperative by treating a person as merely a means and not as an end in themselves, it is said to be inconsistent with Kantian Ethics. If it abides by the categorical imperative, it is consistent with Kantian Ethics. If a principle violates a set of rules that is commonly known to be “morally right”, it is inconsistent with deontological ethics. If it abides by the set of rules, it is consistent with deontological ethics. There is no specific set of rules defined universally, so deontological consistency is checked against commonly agreed principles such as fundamental human rights, no harm to others, no theft and so on.

1. Asilomar AI Principles

11) Human Values: AI systems should be designed and operated so as to be compatible with ideals of human dignity, rights, freedoms, and cultural diversity.

13) Liberty and Privacy: The application of AI to personal data must not unreasonably curtail people’s real or perceived liberty.

Being ‘compatible with ideals of human dignity, rights, freedoms’ and ensuring that people’s liberty is not curtailed implies treating humans as an end in themselves, and not merely as a means. This shows that it is consistent with Kantian ethics. Human dignity, rights, freedoms and liberty are all included in a universally accepted set of rules. Since the code of ethics strives to abide by these rules, it is said to be consistent with deontological ethics.

2. IEEE Ethically Aligned Design

1. Human Rights–A/IS shall be created and operated to respect, promote, and protect internationally recognized human rights.

⁴⁷ Moore, G. E., 1912. Ethics, New York: Oxford University Press. See also Moore, G. E., 1903. Principia Ethica, Cambridge: Cambridge University Press.

‘Respecting human rights’ shows that this principle is consistent with Kantian ethics as well as deontological ethics. This is because it strives to abide by a universally accepted set of rules that treat humans as an end in themselves and not merely as means.

3. ACM Code of Ethics

1. *Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing.*

This principle, which concerns the quality of life of all people, affirms an obligation of computing professionals, both individually and collectively, to use their skills for the benefit of society, its members, and the environment surrounding them. This obligation includes promoting fundamental human rights and protecting each individual's right to autonomy.

(...) Computing professionals should promote environmental sustainability both locally and globally.

2. *Avoid harm.*

In this document, "harm" means negative consequences, especially when those consequences are significant and unjust. Examples of harm include unjustified physical or mental injury, unjustified destruction or disclosure of information, and unjustified damage to property, reputation, and the environment.

3. *Be honest and trustworthy.*

Honesty is an essential component of trustworthiness. A computing professional should be transparent and provide full disclosure of all pertinent system capabilities, limitations, and potential problems to the appropriate parties. Making deliberately false or misleading claims, fabricating or falsifying data, offering or accepting bribes, and other dishonest conduct are violations of the Code.

‘*promoting fundamental rights*’, ‘*avoid harm*’, ‘*be honest and trustworthy*’ all are examples of universally accepted set of rules. Thus this is deontologically

consistent. These rules as well as ‘protecting each individual’s right to autonomy’ also make the principle consistent with Kantian ethics.

4. Computer Ethics Institute

1. Thou shalt not use a computer to harm other people.
2. Thou shalt always use a computer in ways that ensure consideration and respect for other humans.

These principles treat humans as an end in themselves and not merely a means, hence they are consistent with Kantian ethics.

In addition to these principles, there are other principles such as the ones mentioned below which condemn ‘snooping’ and ‘stealing’ which are commonly considered to be morally wrong. Thus they are deontologically consistent.

1. Thou shalt not snoop around in other people's computer files.
2. Thou shalt not use a computer to steal.

5. Data for Democracy Principles (GDEP’s FORTS framework)

1. Consider (if not collect) informed and purposeful consent of data subjects for all projects, and discard resulting data when that consent expires.
4. Practice responsible transparency as the default where possible, throughout the entire data lifecycle.
9. Take great care to communicate responsibly and accessibly.

Principle 1 is consistent with Kantian ethics because emphasis on obtaining consent from a person implies that the person is being treated as an end in themselves and not merely as a means.

Principle 4 and 9 promote transparency and communication, which are commonly known ethical principles, thus showing consistency with Deontological ethics.

6. Data Science Code of Professional Conduct

Rule 3 - Scope of Data Science Professional Services Between Client and Data Scientist

(b) A data scientist shall not counsel a client to engage, or assist a client, in conduct that the data scientist knows is criminal or fraudulent, but a data scientist may discuss the consequences of any proposed course of conduct with a client and may counsel or assist a client to make a good faith effort to determine the validity, scope, meaning or application of the data science provided.

Rule 5 - Confidential Information

(e) A data scientist may reveal information relating to the representation of a client to the extent the data scientist reasonably believes necessary:

(1) to prevent reasonably certain death or substantial bodily harm;

(2) to prevent the client from committing a crime or fraud that is reasonably certain to result in substantial injury to the financial interests or property of another and in furtherance of which the client has used or is using the data scientist's services.

Rule 3 recommends that the data scientist ensure that their client is not involved in criminal or fraudulent conduct. As this is a commonly agreed upon rule, it is deontologically consistent.

Rule 5 says that a data scientist can reveal information regarding a client if the latter is involved in criminal activities. If this involves reporting a client without their permission, it may violate Kant's categorical imperative since it could be seen as a lie by omission.

7. Information Security Consortium Code of Ethics

Act honorably, honestly, justly, responsibly, and legally.

Values such as ‘honor’ and ‘honesty’ are consistent with Deontological ethics. ‘Honesty’ is one of the fundamental principles associated with the categorical imperative, thus, this is consistent with Kantian ethics as well.

8. IFLA Professional Code of Ethics for Librarians

2. Responsibilities towards individuals and society

In order to promote inclusion and eradicate discrimination, librarians and other information workers ensure that the right of accessing information is not denied and that equitable services are provided for everyone whatever their age, citizenship, political belief, physical or mental ability, gender identity, heritage, education, income, immigration and asylum-seeking status, marital status, origin, race, religion or sexual orientation.

‘Inclusion’ and ‘eradicate discrimination’ imply that persons are treated as ends in themselves and not as mere means. This is consistent with Kantian ethics. Since they can also be categorised as common values that are generally respected, they are deontologically consistent.

9. INFORMS Ethical Guidelines

- Inclusive of all colleagues, and rejecting discrimination and harassment in any form.
- Tolerant of well-conducted research and well-reasoned results, which may differ from our own findings or opinions.
- Truthful in providing attribution when our work draws from the ideas of others.

‘Inclusivity’, ‘tolerance’ and ‘truthfulness’ are universally accepted as morally right set of values. Thus this is consistent with deontological ethics. ‘Truthfulness’ in specific emphasises treating humans as ends in themselves and not as mere means, thus it is consistent with Kantian ethics.

10. ASA Ethical Guidelines for Statistical Practice

1. Respects and acknowledges the contributions and intellectual property of others.
7. Exhibits respect for others and, thus, neither engages in nor condones discrimination based on personal characteristics; bullying; unwelcome physical, including sexual, contact; or other forms of harassment or intimidation, and takes appropriate action when aware of such unethical practices by others.

These principles show consistency with deontology ('respect for others' and 'condones discrimination') as well as Kantian ethics since persons are treated as ends in themselves.

11. AI at Google Principles

We will not design or deploy AI in the following application areas:

2. Weapons or other technologies whose principal purpose or implementation is to cause or directly facilitate injury to people.
3. Technologies that gather or use information for surveillance violating internationally accepted norms.
4. Technologies whose purpose contravenes widely accepted principles of international law and human rights.

Condoning technology that 'injures people', 'gathers surveillance violating internationally accepted norms' and 'violates widely accepted principles of international law and human rights' all point towards consistency with Kantian ethics as well as deontological ethics.

(xii) Microsoft AI Principles

These include: Fairness, Inclusiveness, Reliability & Safety, Transparency

All of these values are consistent with deontological ethics. Since there is no clarity on whether humans are treated as ends in themselves or as mere means, we cannot conclude whether it is consistent with Kantian ethics.

3. Virtue and Applied Ethics

In this section the appearance of certain words manifests the existence of the ethical standing thus no explanation has been furthered.

3.1. Social Benefit

Social Benefit consideration encompasses a utilitarian approach which envisages actions to be ethical if they benefit the society. This ethical ideology is overtly present in fourteen Codes.⁴⁸

1. **Asilomar Principles**, “*Principle 14 and 1*”

“14) Shared Benefit: AI technologies should benefit and empower as many people as possible.”

“1) *Research Goal*: The goal of AI research should be to create not undirected intelligence, but beneficial intelligence.”⁴⁹

2. **Google AI Principles**, “1. Be socially beneficial.”

The expanded reach of new technologies increasingly touches society as a whole. Advances in AI will have transformative impacts in a wide range of fields, including healthcare, security, energy, transportation, manufacturing, and entertainment. As

⁴⁸ Asilomar AI Principles, Principle 14 and 1; Google AI principles, Objective 1 Be socially beneficial; ACM Code of Ethics Section 3.1 and 3; Global Data Ethics Principles, FORTS Framework, Social Benefit; EU GDPR, Article 1- data is collected to maintain law and order (control and regulate crime and criminals) and for preventing threats to public security; IAB Ethics and the Internet Policy Statement, Introduction; IEEE Ethically Aligned Design, Objectives and Well-being Metrics; Ten Commandments of Computer Ethics, Commandment 9; IEEE Policies, Rule 1; (ISC)² Code Of Ethics, Canons; INFORMS Ethics Guidelines, Principle 1; IFLA Code of Ethics for Librarians, Section 1; IAB Ethics and the Internet Policy Statement, Introduction; ASA Ethical Guidelines for Statistical Practice, Purpose of the Guidelines and; LOPSA Code of Ethics, Education & Social Responsibility.

⁴⁹ Asilomar AI Principles, Principle 14 and 1.

we consider potential development and uses of AI technologies, we will take into account a broad range of social and economic factors, and will proceed where we believe that the overall likely benefits substantially exceed the foreseeable risks and downsides. (Emphasis supplied).”⁵⁰

3. ACM Code of Ethics, “ Section 3.1 and 3

Section 3 Professional Leadership Principles.

Leadership may either be a formal designation or arise informally from influence over others. In this section, “leader” means any member of an organization or group who has influence, educational responsibilities, or managerial responsibilities.

While these principles apply to all computing professionals, leaders bear a heightened responsibility to uphold and promote them, both within and through their organizations.

Section 3.1 Ensure that the public good is the central concern during all professional computing work.

People—including users, customers, colleagues, and others affected directly or indirectly— should always be the central concern in computing. The public good should always be an explicit consideration when evaluating tasks associated with research, requirements analysis, design, implementation, testing, validation, deployment, maintenance, retirement, and disposal. Computing professionals should keep this focus no matter which methodologies or techniques they use in their practice.”⁵¹

4. Global Data Ethics Principles, FORTS Framework,

“SOCIAL BENEFIT I place people before data and am responsible for maximizing social benefit and minimizing harm. I consider the impact of my work on communities of people, other living beings, ecosystems and the world-at-large.”⁵²

⁵⁰ Google AI principles, Objective 1 Be socially beneficial.

⁵¹ ACM Code of Ethics Section 3.1 and 3.

⁵² Global Data Ethics Principles, FORTS Framework, Social Benefit.

5. EU GDPR, “Article 1

Article 1

Subject-matter and objectives

1. This Directive lays down the rules relating to the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, including the safeguarding against and the prevention of threats to public security.

2. In accordance with this Directive, Member States shall:

1. protect the fundamental rights and freedoms of natural persons and in particular their right to the protection of personal data; and
2. ensure that the exchange of personal data by competent authorities within the Union, where such exchange is required by Union or Member State law, is neither restricted nor prohibited for reasons connected with the protection of natural persons with regard to the processing of personal data.

This Directive shall not preclude Member States from providing higher safeguards than those established in this Directive for the protection of the rights and freedoms of the data subject with regard to the processing of personal data by competent authorities.”⁵³

6. IAB Ethics and the Internet Policy Statement,

“Introduction. At great human and economic cost, resources drawn from the U.S. Government, industry and the academic community have been assemble into a collection of interconnected networks called the Internet. Begun as a vehicle for experimental network research in the mid 1970's, the Internet has become an important national infrastructure supporting an increasingly widespread, multi-disciplinary community of researchers ranging, inter alia, from computer

⁵³ EU GDPR, Article 1- data is collected to maintain law and order (control and regulate crime and criminals) and for preventing threats to public security.

scientists and electrical engineers to mathematicians, physicists, medical researchers, chemists, astronomers and space scientists.

As is true of other common infrastructures (e.g., roads, water reservoirs and delivery systems, and the power generation and distribution network), there is widespread dependence on the Internet by its users for the support of day-to-day research activities.

The reliable operation of the Internet and the responsible use of its resources is of common interest and concern for its users, operators and sponsors. Recent events involving the hosts on the Internet and in similar network infrastructures underscore the need to reiterate the professional responsibility every Internet user bears to colleagues and to the sponsors of the system. Many of the Internet resources are provided by the U.S. Government. Abuse of the system thus becomes a Federal matter above and beyond simple professional ethics.”⁵⁴

7. **IEEE Ethically Aligned Design**, Objective and Well being metrics⁵⁵

“General Principle 2. Well-being A/IS creators shall adopt increased human well-being as a primary success criterion for development.”

8. **Ten Commandments of Computer Ethics**, “Commandment 9

Thou Shalt Think About The Social Consequences Of The Program You Are Writing Or The System You Are Designing.”⁵⁶

9. **IEEE Policies**, Rule 1⁵⁷

“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”.

⁵⁴ IAB Ethics and the Internet Policy Statement, Introduction.

⁵⁵ IEEE Ethically Aligned Design, Objectives and Well-being Metrics.

⁵⁶ Ten Commandments of Computer Ethics, Commandment 9.

⁵⁷ IEEE Policies, Rule 1.

10. (ISC)² Code Of Ethics, Canons⁵⁸

Protect society, the common good, necessary public trust and confidence, and the infrastructure.

11. INFORMS Ethics Guidelines,

“Principle 1 Society: Whereas operations research and analytics can have a deep impact on society, with applications ranging from medical decisions to national defense, business strategy, public policy, and many other contexts, we aspire to be:

- Accountable for our professional actions and the impact of our work.
- Forthcoming about our assumptions, interests, sponsors, motivations, limitations, and potential conflicts of interest.
- Honest in reporting our results, even when they fail to yield the desired outcome.
- Objective in our assessments of facts, irrespective of our opinions or beliefs.
- Respectful of the viewpoints and the values of others.
- Responsible for undertaking research and projects that provide positive benefits by advancing our scientific understanding, contributing to organizational improvements, and supporting social good.”⁵⁹

12. IFLA Code of Ethics for Librarians,

“Section 1 Access to information

The core mission of librarians and other information workers is to ensure access to information for all for personal development, education, cultural enrichment, leisure, economic activity and informed participation in and enhancement of democracy.

Librarians and other information workers reject the denial and restriction of access to information and ideas most particularly through censorship whether by states, governments, or religious or civil society institutions.

⁵⁸ (ISC)² Code Of Ethics, Canons.

⁵⁹ INFORMS Ethics Guidelines, Principle 1.

Librarians and other information workers offering services to the public should make every endeavour to offer access to their collections and services free of cost to the user. If membership fees and administrative charges are inevitable, they should be kept as low as possible, and practical solutions found so that socially disadvantaged people are not excluded.

Librarians and other information workers promote and publicise their collection and services so that users and prospective users are aware of their existence and availability.

Librarians and other information workers use the most effective ways to make the material accessible to all. For this purpose they seek to ensure that the websites of libraries and other information institutions comply with international standards for accessibility and access to them is not subject to barriers.”⁶⁰

13. ASA Ethical Guidelines for Statistical Practice, “*Purpose of the Guidelines,*

Above all, professionalism in statistical practice presumes the goal of advancing knowledge while avoiding harm; using statistics in pursuit of unethical ends is inherently unethical.”⁶¹

14. LOPSA Code of Ethics, “Education & Social Responsibility

Education

I will continue to update and enhance my technical knowledge and other work-related skills. I will share my knowledge and experience with others.

15. Social Responsibility

As an informed professional, I will encourage the writing and adoption of relevant policies and laws consistent with these ethical principles.”⁶²

⁶⁰ IFLA Code of Ethics for Librarians, Section 1.

⁶¹ ASA Ethical Guidelines for Statistical Practice, Purpose of the Guidelines.

⁶² LOPSA Code of Ethics, Education & Social Responsibility.

3.2. Legality

Seven of the Codes⁶³ assert on the actions of the practitioners being legal. The legality is evident in the bare text and is self explanatory.

1. **Google AI Principle-** AI applications that we will not pursue

“4. Technologies whose purpose contravenes widely accepted principles of international law and human rights.”⁶⁴

2. **IEEE Ethically Aligned Design, General Principles**⁶⁵

1. Human Rights, 3. Data Agency, 5. Transparency, 6. Accountability, and 7.

3.3. Awareness of Misuse

The above general principles when read in light of their commentary establish the legal foundation on which the ethical guideline has been erected.

1. **ACM Code of Ethics, Section 2.3**

“ Section 2.3 Know and respect existing rules pertaining to professional work
“Rules” here include local, regional, national, and international laws and regulations, as well as any policies and procedures of the organizations to which the professional belongs. Computing professionals must abide by these rules unless there is a compelling ethical justification to do otherwise. Rules that are judged unethical should be challenged. A rule may be unethical when it has an inadequate moral basis or causes recognizable harm. A computing professional should consider challenging the rule through existing channels before violating the rule. A computing professional who decides to violate a rule because it is unethical, or for

⁶³ Google AI principles, AI applications we will not pursue 4; IEEE Ethically Aligned Design, Goals & Objectives; ACM Code of Ethics, Section 2.3; Data Science Code of Professional Conduct, Rule 8 (e) & 9 (c); Article 4(1)(a) and Article 8; ISSA Code of Ethics, Rule 1; (ISC)² Code Of Ethics, Canon 2; and LOPSA Code of Ethics, Laws and Policies.

⁶⁴ Google AI principles, AI applications we will not pursue 4.

⁶⁵ IEEE Ethically Aligned Design, Goals & Objectives.

any other reason, must consider potential consequences and accept responsibility for that action.”⁶⁶

2. Data Science Code of Professional Conduct, “Rule 8 (e) & 9 (c)

Rule 8 (e) If a data scientist knows that a client intends to engage, is engaging or has engaged in criminal or fraudulent conduct related to the data science provided, the data scientist shall take reasonable remedial measures, including, if necessary, disclosure to the proper authorities.

Rule 9 (c) engage in data science involving dishonesty, fraud, deceit or misrepresentation.”⁶⁷

3. ISSA Code of Ethics, Article 4(1)(a) and Article 8⁶⁸

Perform all professional activities and duties in accordance with all applicable laws and the highest ethical principles;

4. (ISC)² Code Of Ethics, Canon 2⁶⁹

Act honorably, honestly, justly, responsibly, and legally.

5. LOPSA Code of Ethics, “Laws and Policies

I will educate myself and others on relevant laws, regulations and policies regarding the performance of my duties.”

⁶⁶ ACM Code of Ethics, Section 2.3.

⁶⁷ Data Science Code of Professional Conduct, Rule 8 (e) & 9 (c).

⁶⁸ Article 4(1)(a) and Article 8; ISSA Code of Ethics, Rule 1.

⁶⁹ (ISC)² Code Of Ethics, Canon 2; and LOPSA Code of Ethics, Laws and Policies.

3.4. Benevolence

1. IFLA Professional Code of Ethics for Librarians

The principle of benevolence was a part of only the IFLA Professional Code of Ethics for Librarians on whom there is a responsibility to make provisions so that the less privileged also get access to information.⁷⁰

“Access to information- IFLA Code of Ethics for Librarians, Section 1. Access to information- Responsibility to make provisions so that the less privileged also get access to information.

“The core mission of librarians and other information workers is to ensure access to information for all for personal development, education, cultural enrichment, leisure, economic activity and informed participation in and enhancement of democracy.

Librarians and other information workers reject the denial and restriction of access to information and ideas most particularly through censorship whether by states, governments, or religious or civil society institutions.

Librarians and other information workers offering services to the public should make every endeavour to offer access to their collections and services free of cost to the user. If membership fees and administrative charges are inevitable, they should be kept as low as possible and practical solutions found so that socially disadvantaged people are not excluded.

Librarians and other information workers promote and publicise their collection and services so that users and prospective users are aware of their existence and availability.

Librarians and other information workers use the most effective ways to make the material accessible to all. For this purpose they seek to ensure that the websites of libraries and other information institutions comply with international standards for accessibility and access to them is not subject to barriers”.

⁷⁰ IFLA Code of Ethics for Librarians, Section 1. Access to information- Responsibility to make provisions so that the less privileged also get access to information.

3.5. Harm

Eleven Codes of ethics⁷¹ align with the Principle of Harm which illuminates the increasing inclination towards utilitarianism.

1. Google AI applications we will not pursue

In addition to the above objectives, we will not design or deploy AI in the following application areas:

- Technologies that cause or are likely to cause overall harm. Where there is a material risk of harm, we will proceed only where we believe that the benefits substantially outweigh the risks, and will incorporate appropriate safety constraints.
- Weapons or other technologies whose principal purpose or implementation is to cause or directly facilitate injury to people.
- Technologies that gather or use information for surveillance violating internationally accepted norms.
- Technologies whose purpose contravenes widely accepted principles of international law and human rights.

We want to be clear that while we are not developing AI for use in weapons, we will continue our work with governments and the military in many other areas. These include cyber security, training, military recruitment, veterans' healthcare, and search and rescue. These collaborations are important and we'll actively look for more ways to augment the critical work of these organizations and keep service members and civilians safe.”

2. ACM Code of Ethics Section 1.2

⁷¹ Google AI principles, AI applications we will not pursue; ACM Code of Ethics Section 1.2; Ten Commandments of Computer Ethics, Commandment 1; Global Data Ethics Principles, FORTS Framework- Social Benefit; Data Science Code of Professional Conduct, Rule3(b) & 8(g); EU GDPR, the declaration is formulated to protect the society thus the corollary encapsulates the principle of harm; IEEE Policies, Rule 9and 1; ISSA Code of Ethics, Rule 6; IAB Statement of Policy, Point (c) & (d); INFORMS Ethics Guidelines, Article 2. Our Organisation and; ASA Ethical Guidelines for Statistical Practice, Purpose of the Guidelines.

Section 1.2 Avoid harm.

In this document, “harm” means negative consequences, especially when those consequences are significant and unjust. Examples of harm include unjustified physical or mental injury, unjustified destruction or disclosure of information, and unjustified damage to property, reputation, and the environment. This list is not exhaustive.

Well-intended actions, including those that accomplish assigned duties, may lead to harm. When that harm is unintended, those responsible are obliged to undo or mitigate the harm as much as possible. Avoiding harm begins with careful consideration of potential impacts on all those affected by decisions. When harm is an intentional part of the system, those responsible are obliged to ensure that the harm is ethically justified. In either case, ensure that all harm is minimized.

To minimize the possibility of indirectly or unintentionally harming others, computing professionals should follow generally accepted best practices unless there is a compelling ethical reason to do otherwise. Additionally, the consequences of data aggregation and emergent properties of systems should be carefully analyzed. Those involved with pervasive or infrastructure systems should also consider Principle 3.7.

A computing professional has an additional obligation to report any signs of system risks that might result in harm. If leaders do not act to curtail or mitigate such risks, it may be necessary to “blow the whistle” to reduce potential harm. However, capricious or misguided reporting of risks can itself be harmful. Before reporting risks, a computing professional should carefully assess relevant aspects of the situation.”

3. Ten Commandments of Computer Ethics, Commandment 1

“Thou Shalt Not Use A Computer To Harm Other People”

4. Global Data Ethics Principles, FORTS Framework

3.6. Social Benefit

“I place people before data and am responsible for maximizing social benefit and minimizing harm. I consider the impact of my work on communities of people, other living beings, ecosystems and the world-at-large.”

1. Data Science Code of Professional Conduct, Rule 3(b) & 8(g)

Rule 3 - Scope of Data Science Professional Services between Client and Data Scientist

“(b) A data scientist shall not counsel a client to engage, or assist a client, in conduct that the data scientist knows is criminal or fraudulent, but a data scientist may discuss the consequences of any proposed course of conduct with a client and may counsel or assist a client to make a good faith effort to determine the validity, scope, meaning or application of the data science provided.”

Rule 8 - Data Science Evidence, Quality of Data and Quality of Evidence

“(g) A data scientist shall use reasonable diligence when designing, creating and implementing algorithms to avoid harm. The data scientist shall disclose to the client any real, perceived or hidden risks from using the algorithm. After full disclosure, the client is responsible for making the decision to use or not use the algorithm. If a data scientist reasonably believes an algorithm will cause harm, the data scientist shall take reasonable remedial measures, including disclosure to the client, and including, if necessary, disclosure to the proper authorities. The data scientist shall take reasonable measures to persuade the client to use the algorithm appropriately.”

2. EU GDPR

The declaration is formulated to protect the society thus the corollary encapsulates the principle of harm

3. IEEE Policies, Rule 9 and 1

“Rule 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;

Rule 9: to avoid injuring others, their property, reputation, or employment by false or malicious action.”

4. ISSA Code of Ethics, Rule 6

“Not intentionally injure or impugn the professional reputation or practice of colleagues, clients, or employers.”

5. IAB Statement of Policy, Point (c) & (d)

The IAB strongly endorses the view of the Division Advisory Panel of the National Science Foundation Division of Network, Communications Research and Infrastructure which, in paraphrase, characterized as unethical and unacceptable any activity which purposely:

- (c) wastes resources (people, capacity, computer) through such actions,
- (d) destroys the integrity of computer-based information.”

6. INFORMS Ethics Guidelines, Article 2

Our Organizations

“Whereas our work influences the success and standing of our organizations (universities, businesses, government and non profit agencies) as well as our constituencies (students, clients, customers, and suppliers), we aspire to be:

- **Accurate** in our assertions, reports, and presentations.
- **Alert** to possible unintended or negative consequences that our results and recommendations may have on others.
- **Informed** of advances and developments in the fields relevant to our work.
- **Questioning** of whether there are more effective and efficient ways to reach a goal.

- **Realistic** in our claims of achievable results, and in acknowledging when the best course of action may be to terminate a project.
- **Rigorous** by adhering to proper professional practices in the development and reporting of our work.”

7. ASA Ethical Guidelines for Statistical Practice

Purpose of the Guidelines

“The American Statistical Association’s Ethical Guidelines for Statistical Practice are intended to help statistics practitioners make decisions ethically. Additionally, the ethical guidelines aim to promote accountability by informing those who rely on statistical analysis of the standards they should expect. The discipline of statistics links the capacity to observe with the ability to gather evidence and make decisions, providing a foundation for building a more informed society. Because society depends on informed judgments supported by statistical methods, all practitioners of statistics—regardless of training and occupation or job title—have an obligation to work in a professional, competent, respectful, and ethical manner.

Good statistical practice is fundamentally based on transparent assumptions, reproducible results, and valid interpretations. In some situations, guideline principles may conflict, requiring individuals to prioritize principles according to context. However, in all cases, stakeholders have an obligation to act in good faith, to act in a manner that is consistent with these guidelines, and to encourage others to do the same. Above all, professionalism in statistical practice presumes the goal of advancing knowledge while avoiding harm; using statistics in pursuit of unethical ends is inherently unethical.

Ethical statistical practice does not include, promote, or tolerate any type of professional or scientific misconduct, including, but not limited to, bullying, sexual or other harassment, discrimination based on personal characteristics, or other forms of intimidation. The principles expressed here should guide both those whose primary occupation is statistics and those in all other disciplines who use statistical methods in their professional work. Therefore, throughout these guidelines, the

term “statistician” includes all practitioners of statistics and quantitative sciences—regardless of job title or field of degree—comprising statisticians at all levels of the profession and members of other professions who utilize and report statistical analyses and their implications.”

3.7. Honesty

Nine of the Codes⁷² align with the Principle of Honesty.

1. ACM Code of Ethics, Section 1.3

“Be honest and trustworthy

Honesty is an essential component of trustworthiness. A computing professional should be transparent and provide full disclosure of all pertinent system capabilities, limitations, and potential problems to the appropriate parties. Making deliberately false or misleading claims, fabricating or falsifying data, offering or accepting bribes, and other dishonest conduct are violations of the Code.

Computing professionals should be honest about their qualifications, and about any limitations in their competence to complete a task. Computing professionals should be forthright about any circumstances that might lead to either real or perceived conflicts of interest or otherwise tend to undermine the independence of their judgment. Furthermore, commitments should be honored.

Computing professionals should not misrepresent an organization’s policies or procedures, and should not speak on behalf of an organization unless authorized to do so.”

2. Ten Commandments of Computer Ethics, Commandment 5

“Thou Shalt Not Use A Computer To Bear False Witness.”

3. Data Science Code of Professional Conduct, Rule 8(f)

⁷² ACM Code of Ethics, Section 1.3; Ten Commandments of Computer Ethics, Commandment 5; Data Science Code of Professional Conduct, Rule 8(f); IEEE Policies, Rule 3; ISSA Code of Ethics, Rule, 5; (ISC)² Code Of Ethics; Canon 2; INFORMS Ethics Guidelines, Principle 1; ASA Ethical Guidelines for Statistical Practice, Professional Integrity and Accountability; and LOPSA Code of Ethics, Personal Integrity.

“A data scientist shall not knowingly:

- (1) fail to use scientific methods in performing data science;
- (2) fail to rank the quality of evidence in a reasonable and understandable manner for the client;
- (3) claim weak or uncertain evidence is strong evidence;
- (4) misuse weak or uncertain evidence to communicate a false reality or promote an illusion of understanding;
- (5) fail to rank the quality of data in a reasonable and understandable manner for the client;
- (6) claim bad or uncertain data quality is good data quality;
- (7) misuse bad or uncertain data quality to communicate a false reality or promote an illusion of understanding;
- (8) fail to disclose any and all data science results or engage in cherry-picking;
- (9) fail to attempt to replicate data science results;
- (10) fail to disclose that data science results could not be replicated;
- (11) misuse data science results to communicate a false reality or promote an illusion of understanding;
- (12) fail to disclose failed experiments or disconfirming evidence known to the data scientist to be directly adverse to the position of the client;
- (13) offer evidence that the data scientist knows to be false. If a data scientist questions the quality of data or evidence the data scientist must disclose this to the client. If a data scientist has offered material evidence and the data scientist comes to know of its falsity, the data scientist shall take reasonable remedial measures, including disclosure to the client. A data scientist may disclose and label evidence the data scientist reasonably believes is false;
- (14) cherry-pick data and data science evidence.”

4. IEEE Policies, Rule 3

“to be honest and realistic in stating claims or estimates based on available data”

5. ISSA Code of Ethics, Rule, 5

“Refrain from any activities which might constitute a conflict of interest or otherwise damage the reputation of or is detrimental to employers, the information security profession, or the Association”

6. (ISC)² Code Of Ethics; Canon 2

Act honorably, honestly, justly, responsibly, and legally.

7. INFORMS Ethics Guidelines, Principle 1

“Society

Whereas operations research and analytics can have a deep impact on society, with applications ranging from medical decisions to national defense, business strategy, public policy, and many other contexts, we aspire to be:

- **Accountable** for our professional actions and the impact of our work.
- **Forthcoming** about our assumptions, interests, sponsors, motivations, limitations, and potential conflicts of interest.
- **Honest** in reporting our results, even when they fail to yield the desired outcome.
- **Objective** in our assessments of facts, irrespective of our opinions or beliefs.
- **Respectful** of the viewpoints and the values of others.
- **Responsible** for undertaking research and projects that provide positive benefits by advancing our scientific understanding, contributing to organizational improvements, and supporting social good.”

8. ASA Ethical Guidelines for Statistical Practice, Professional Integrity and Accountability

“The ethical statistician uses methodology and data that are relevant and appropriate; without favoritism or prejudice; and in a manner intended to produce valid, interpretable, and reproducible results. The ethical statistician

does not knowingly accept work for which he/she is not sufficiently qualified, is honest with the client about any limitation of expertise, and consults other statisticians when necessary or in doubt. It is essential that statisticians treat others with respect.”

9. LOPSA Code of Ethics, Personal Integrity

“I will be honest in my professional dealings, and forthcoming about my competence and the impact of my mistakes. I will seek assistance from others when required.

I will avoid conflicts of interest and biases whenever possible. When my advice is sought, if I have a conflict of interest or bias, I will declare it if appropriate, and recuse myself if necessary.”