Ethics

Definitions

Deontology: The word deontology derives from the Greek words for duty (deon) and science (or study) of (logos). In contemporary moral philosophy, deontology is one of those kinds of normative theories regarding which choices are morally required, forbidden, or permitted. In other words, deontology falls within the domain of moral theories that guide and assess our choices of what we ought to do (deontic theories), in contrast to those that guide and assess what kind of person we are and should be (aretaic [virtue] theories). And within the domain of moral theories that assess our choices, deontologists—those who subscribe to deontological theories of morality—stand in opposition to consequentialists. (Stanford Encyclopedia of Philosophy, 2024).

Ultilitarianism/ Consequentialism: Consequentialism, as its name suggests, is simply the view that normative properties depend only on consequences. This historically important and still popular theory embodies the basic intuition that what is best or right is whatever makes the world best in the future, because we cannot change the past, so worrying about the past is no more useful than crying over spilled milk. This general approach can be applied at different levels to different normative properties of different kinds of things, but the most prominent example is probably consequentialism about the moral rightness of acts, which holds that whether an act is morally right depends only on the consequences of that act or of something related to that act, such as the motive behind the act or a general rule requiring acts of the same kind (Stanford Encyclopedia of Philosophy, 2023).

Difference between Deontology and Ultilitarianism/ Consequentialism:
Deontology judges actions based on duties and principles: something is right or wrong depending on whether it respects moral rules, regardless of the outcome. Utilitarianism, or consequentialism, judges actions based on their outcomes: something is right if it produces the greatest overall benefit, even if it breaks a rule.

In short, deontology asks “Is the action itself right?”, while utilitarianism asks “Does the action lead to the best consequences?”

Models

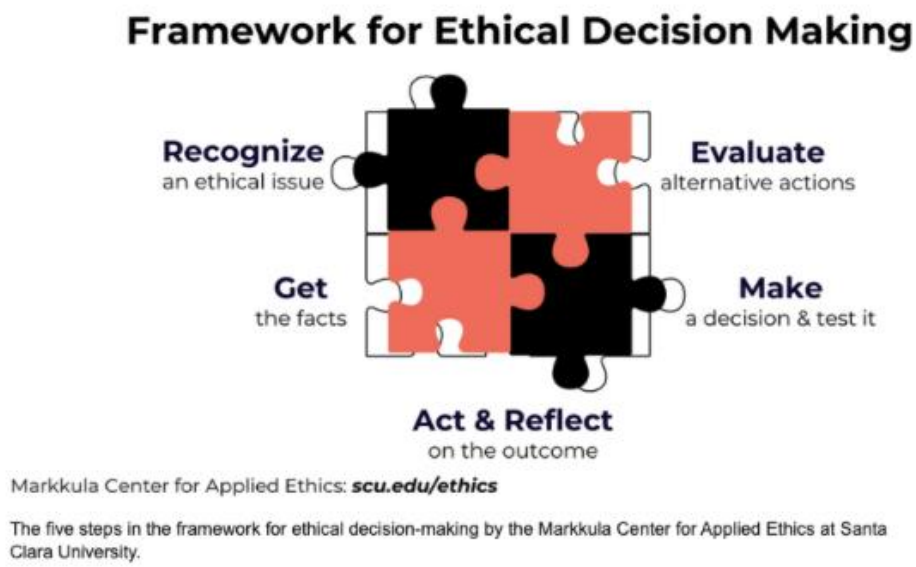
Model 1: Ethics Guidelines for Trustworthy AI
The EU Ethics Guidelines for Trustworthy AI is a framework developed by the European Commission to ensure that AI systems are lawful, ethical, and robust. It is mainly deontological, as it is grounded in fundamental rights and principles such as human autonomy, fairness, transparency, and accountability, which must always be respected regardless of outcomes. The framework provides seven key requirements (including

human oversight, privacy, and non-discrimination) and offers an assessment list to translate ethical principles into practice. It is used by organizations and policymakers to evaluate and guide AI projects, helping to build trust, prevent risks such as bias or privacy violations, and ensure responsible innovation. I chose this model because it is rights-based and gives a structured approach to integrating ethics into AI development (European Commisian, 2019).

Figure 2: Interrelationship of the seven requirements: all are of equal importance, support each other, and should be implemented and evaluated throughout the AI system's lifecycle

Model 2: Framework for Ethical Decision Making

The Markkula Framework for Ethical Decision Making is a practical model developed by the Markkula Center for Applied Ethics at Santa Clara University. It guides ethical choices through five steps: recognize an ethical issue, get the facts, evaluate alternative actions, make a decision, and act while reflecting on the outcome. This framework is often applied in technology and AI contexts to weigh different options and their potential impacts. It is more consequentialist in nature, as it emphasizes evaluating actions based on their outcomes and overall benefits, while still allowing other perspectives (rights, justice, common good) to be considered. I chose this model because it provides a step-by-step process that contrasts strongly with the principle- and rights-based EU Trustworthy AI Guidelines, making it useful for comparing different ethical approaches in data science (Lacheb, et al. 2023).



The five steps in the framework for ethical decision-making by the Markkula Center for Applied Ethics at Santa Clara University.

Differences between the models

The key difference between the two models is their ethical perspective: the EU Trustworthy AI Guidelines are deontological, focusing on duties, principles, and fundamental rights that must always be respected, while the Markkula Framework leans consequentialist, emphasizing the outcomes of actions and weighing different options to find the most beneficial result. For a data scientist, combining these views is valuable: the EU model ensures that AI projects are aligned with human rights and non-negotiable ethical principles, while the Markkula model helps evaluate trade-offs and practical impacts in real-world situations. Together, they provide both a solid ethical foundation and a flexible decision-making tool, which is essential for building responsible and trustworthy AI systems.

Conclusion: Which Model Fits Best for Data Ethics

For data ethics, the EU Trustworthy AI Guidelines provide the strongest foundation because they are rights-based and ensure that non-negotiable principles such as privacy, fairness, and human autonomy are respected, which are essential in a regulated environment. However, the Markkula Framework is highly valuable for navigating practical dilemmas, as it allows data scientists to weigh trade-offs and evaluate outcomes. Using both together offers the best approach: the EU model sets the ethical boundaries, while Markkula supports thoughtful, outcome-oriented decision-making when balancing competing interests in real-world AI projects.

References:

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