

Beginning: From “Do No Harm” to Seeing the Gray Areas

At the start of this course, when asked, "What is an ethical engineer?" I would have given a simple answer about avoiding obvious wrongdoing and following rules. That rule-first picture was tidy and felt like professionalism. However, over this course, I've evolved my image of ethics in engineering.

In my Week 6 reflection, I summarized Lloyd and Busby's study as: decisions rarely present as one big fork in the road; they accumulate in the background of regular work, and being an ethical engineer means staying attentive to those small choices because they shape safety, usability, and trust just as much as headline cases. The study also clarified my own beliefs, which is that I explore ethics in the minutiae due to earlier experiences, such as watching air-crash investigations with my dad, and seeing how small seemingly benign steps can add up to create an emergency. During the week six activity, I also caught myself rationalizing an unethical position, as I had listed an unfinished thermostat project on my resume to get a job, which has nudged me to set a more explicit personal goal: that is, a commitment to transparency as a virtue, not just compliance as a rule.

The upshot of my working thesis for this essay is that an ethical engineer is not only a rule-abiding professional, but also someone who keeps quick outcome checks in view, holds a few firm duties, and cultivates durable virtues, applied continuously in the micro-ethics of daily work, not just when alarms are blaring.

Deontology and Virtue ethics in the day to day

Throughout the course, I have redefined my personal ethics guidelines, which I view as a two-part mindset. In my daily work, I am guided first by virtue ethics and deontological duties, and then use consequentialism to ensure that the overall direction of a project serves a genuine public good.

The use of deontology maintains firm guidelines that some actions are not permitted, even if they promise net benefits, because the right action is measured by conformity to moral norms rather than by outcomes alone. This anchors routine choices, such as truthful reporting, safety holds, and disclosure of uncertainties, before they snowball. This picture also aligns with what Lloyd and Busby refer to as the "folk ethics" of design, where teams negotiate trade-offs in ordinary conversation and make numerous small, ethically charged moves rather than a few dramatic ones (Lloyd and Busby 2003).

In that flow, duties function as guardrails. Folk ethics can weigh simplicity, cost, and precedent, and incorporates a duty not to mislead or to compromise safety constraints. Seeing design as a collection of agreements makes it clear why these constraints matter in mundane moments, not just after something goes wrong. The Citicorp Center case, as introduced in "Engineers' Moral Responsibility: A Confucian Perspective" by Jing and Doorn, exemplifies this duty-first approach in practice. When William LeMessurier learned that bolted joints and quartering winds created a nontrivial collapse risk, LeMessurier's discovery triggered non-negotiable duties to disclose material risk, prevent harm to the public, and uphold professional fidelity despite conflicts. He acted to safeguard the public and told the truth, which many authors cite as an example of courage, integrity, and a commitment to safety in practice (Jing and Doorn 2020). That decision illustrates how deontological duties are applied in real-world projects and how character supports upholding those duties when silence would be easier.

However, rules alone cannot capture everything we expect from professionals. Many features of good engineering, such as sensitivity to risk, awareness of social context, and a standing commitment to the public good, require cultivated dispositions that support right action under pressure. These limitations are why I place virtue ethics alongside duty in the daily cadence of work, since virtues supply the motivation and judgment that rules and calculations cannot fully provide (Harris 2008).

In my practice, the virtues that matter most are honesty, reliability, and civic-mindedness. Honesty means transparent reporting and explicit acknowledgment of uncertainty. Reliability means following through on commitments and maintaining high quality even when tasks are tedious. Civic-mindedness means keeping users and the public in view in every decision, not only the technical core. Workplace interviews capture these day-to-day commitments, including the resolve to "report it as accurately as you can" because someone could be harmed otherwise, and the habit of seeking guidance when an issue falls outside one's expertise (Fila et al., Categories A–B).

Virtues also shape how teams work. Lloyd and Busby describe a "virtue of collectivity," where good engineers share information and work toward agreement as part of everyday design. Seeing design as a series of accumulating agreements clarifies why traits like honesty, reliability, and civic-mindedness matter in routine conversations, not only after failures. Taken together, virtue ethics provides the character and practical judgment to live by the deontological guardrails in ordinary work.

The Consequentialist Overview

Even with duties and character in place, significant limitations remain. Deontology is strong at drawing hard lines for everyday practice, but it can tend to ignore the scale and distribution of harms and benefits, and offers little guidance when duties collide in high-stakes situations. Virtue ethics also has limitations. It explains motivation, perception, and good judgment under pressure, but it does not by itself supply a straightforward method for ranking competing public goods or for setting priorities across a complex system. Harris argues that many aims of good engineering require discretion and inner commitment beyond rules, which is precisely why virtues matter; yet that same emphasis on character does not tell a team how to allocate benefits and burdens across communities or how to set outcome targets at the program level (Harris 2008).

These limitations necessitate the deliberate adoption of consequentialism. At the project and societal scales, a results-oriented lens helps test whether the overall trajectory reduces harm and increases benefits for many users, consistent with standard engineering practice. Consequentialism does not replace guardrails; instead, it supplies program-level goals, success metrics, and stakeholder comparisons while deontology and virtues continue to govern permissible means.

Conclusion

So, what is an ethical engineer? For me, it's not just one who avoids obvious wrongdoing and follows the rules, but rather someone who approaches each decision, large or small, with a balanced sense of duty, character, and consequence. Early in the course, I defined ethical engineering primarily in terms of compliance: meeting codes, honoring obligations, and avoiding shortcuts. That foundation still matters, but it no longer feels like a sufficient definition of engineering ethics. Being ethical is less about memorizing a code and more about cultivating a way of acting, an attentiveness that connects individual choices to their broader social and moral context.

Through that recognition, I also began to see ethics as something lived rather than applied. Deontology expresses the professional duties I hold myself to, including truthful reporting, protecting safety, and honoring confidentiality. Meanwhile, virtue ethics explains how to uphold those duties with consistency and courage when circumstances are uncertain or inconvenient. Consequentialism complements both by extending awareness to the long-term impacts of my actions, reminding me that even well-intentioned work can cause harm if not evaluated in terms of its actual outcomes. Together, these frameworks form a cycle of

reflection: rules guide action, virtues sustain commitment, and outcomes confirm alignment with the public good.

In this sense, my definition of an ethical engineer has expanded from rule-following to self-awareness. It is about the ability to integrate principles, motivations, and consequences into one's professional identity, to act with honesty even when it slows progress, to care about outcomes even when they are invisible, and to uphold duties even when no one is watching.

Citations

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