

# Bridging the Gap Between Academia and Industry

Exploring Interdisciplinary Study of Philosophy and Engineering



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The starting point of my career as an engineer is far from what it can be expected. I studied philosophy and theology at Italian University before pursuing my passion for engineering later on. But the unique interdisciplinary study of philosophy and engineering has given me a fresh perspective on problem-solving and design.

It has allowed me to approach challenges from multiple angles and come up with innovative solutions. Today, I work at the intersection of technology and ethics, creating products that not only work but are also socially responsible. As technology advances and impacts society more than ever, bridging the gap between academia and industry becomes increasingly important.



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## The AI disruption and brand new opportunities

The alarms and catastrophic prediction about the AI dominion is above us in all the social media. If you mix together a lot of buzzwords and

misunderstood concepts, you might be led to believe that the AI revolution will replace all jobs and take over the world. However, this is not the case. In fact, AI brings new opportunities and opens up new spaces for innovation and creativity. As an engineer who works in the intersection of technology and ethics, I see the potential of AI to enhance people's lives and create a better future. We need to embrace this disruption and work together to shape the future of AI, ensuring that it reflects our values and benefits all of humanity.

There is an increasing demand for engineers to not only have technical expertise but also a broader understanding of the social and ethical implications of their work. This new trend intersect with other disciplines as well: think about philosophers and social psychologist who are also needed to evaluate the impact of technology on society.

As well as engineers also philosophers, for instance, need to be aware of how their theories and ideas are applied in the real world. This is where the interdisciplinary study of philosophy and engineering can be incredibly valuable.



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Engineering and philosophy may seem like two distinct fields, but they share a common goal: to improve the world we live in. Engineers use their technical skills to design and build new systems and technologies, while philosophers analyze the fundamental aspects of human existence, such as ethics, morality, and epistemology. By combining their efforts, engineers and philosophers can create solutions that are not only technically sound but also ethical and socially responsible.

**A good manager should be like this**

It may be only my own experience, but I hope it is not. You usually find two types of manager: the ones that have no field experience at all (they studied MBAs but never worked in your domain) or the ones that comes from the bottom (they started from scratch and know everything about the job that has to be done). The former lacks hands on experience, the latter may struggle to see the bigger picture or make strategic decisions. In my opinion, a successful manager must possess technical proficiency, strong leadership abilities, an open-minded attitude, and a dedication to ongoing learning.

I met few of this kind: you can talk to them about everything: and you can see the weight of their humanity! Knowledge is built as a symphony of technical aspects, philosophical implications, social impact, and ethical considerations. A good manager understands the importance of each of these components and how they interact with one another. They know how to motivate their team, communicate effectively, and they are a lifelong learner who is constantly seeking to improve themselves and their team.

### **Ok cool... but where is the benefit?**

One of the most significant benefits of engineers studying philosophy is that it helps them understand the broader implications of their work. For example, an engineer might develop a new technology that is technically advanced but has unintended consequences that harm society or the environment. Studying philosophy can help engineers anticipate these unintended consequences and design solutions that are more responsible and sustainable.

Moreover, philosophy helps engineers think critically about the ethical implications of their work. Engineers have a responsibility to ensure that their work does not harm people or the environment. On the other hand, philosophy students can benefit from studying engineering because it helps them understand the practical applications of their ideas. Philosophers often develop theories about ethics, morality, and the nature of reality without considering the technical constraints of implementing those ideas in the real world. Studying engineering can help philosophers understand the practical limitations of their ideas and develop solutions that are not only theoretically sound but also technically feasible.

Furthermore, engineers can help philosophers understand the limitations of technology and the impact it has on society. Philosophers often develop theories about the impact of technology on society without understanding how technology actually works. By studying engineering, philosophers can gain a better understanding of how technology is developed, how it works, and how it affects society.

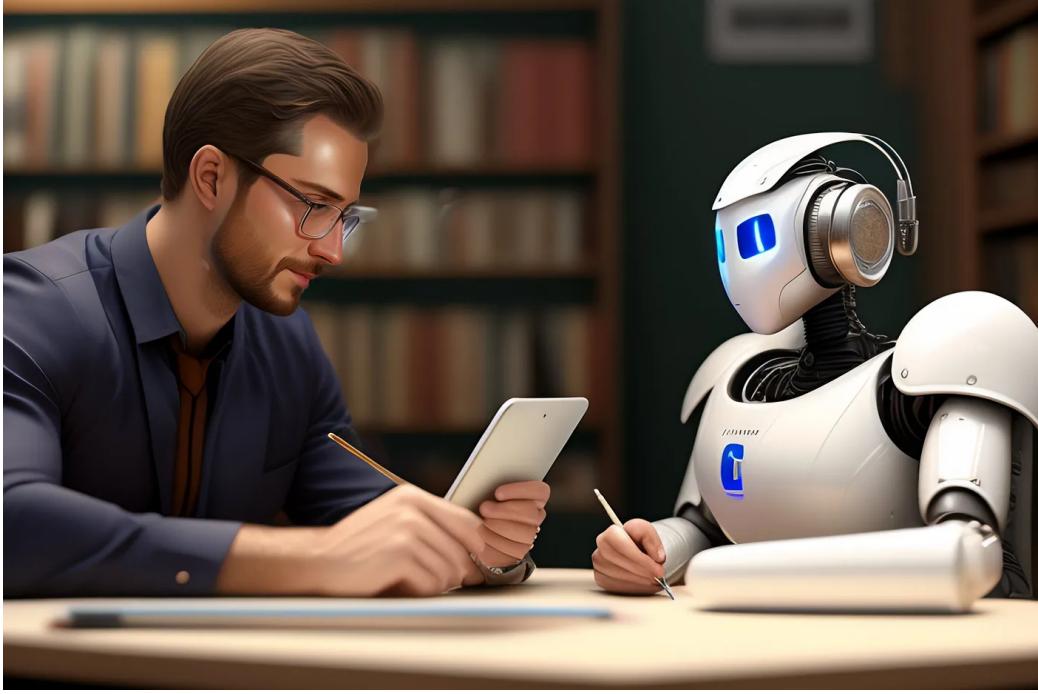


Image from Lexica

## The AI era

While the benefits of interdisciplinary study between philosophy and engineering are numerous, there are some specific areas where this collaboration is especially valuable.

One area is in the development of artificial intelligence (AI). As AI becomes more prevalent in our daily lives, it's important to consider the ethical implications of these technologies. The latest letter by some of the biggest names in tech is an example: they are calling for artificial intelligence labs to stop the training of the most powerful AI systems for at least six months, citing "profound risks to society and humanity."

The letter comes just few days after the announcement of GPT-4, the recently-highlighted AI chatbot tool, that became viral again after demonstrating its capability to draft lawsuits, pass standardized exams, and build a functioning website from a simple hand-drawn sketch. The intent of this pause is to allow independent experts to jointly develop and implement a set of shared protocols for AI tools that are safe "beyond a reasonable doubt."

How can engineers and social experts without the right "toolbox" face such a critical task? It is clear that only engineers who study philosophy can develop a better understanding of the ethical principles that guide the development and implementation of AI; and as well only philosophers who study engineering can gain a better understanding of how AI works and the technical limitations of these technologies.



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## Interdisciplinary thinking

Interdisciplinary study can help bridge the gap between academia and industry. Engineers and philosophers who work together can develop solutions that are not only technically sound and ethically responsible but also commercially viable. This can lead to the development of new technologies and products that are both socially and economically beneficial.

Academia often focuses on basic research and theoretical concepts, while industry is focused on practical applications and commercialization. When experts from these two fields come together, they can combine their different perspectives and expertise to develop practical solutions to real-world problems.

For example, an engineering professor and a philosophy professor might collaborate on a project to develop a new technology that is both technically advanced and socially responsible. The engineering professor could bring technical expertise in the design and development of the technology, while the philosophy professor could provide insights into the ethical and social implications of the technology. This collaboration could lead to the development of a new technology that not only works well but also has positive social and ethical implications.

Moreover, interdisciplinary study can help researchers and industry professionals stay up-to-date with the latest developments in their respective fields. By collaborating with experts from different fields, they can learn about new techniques and technologies that they might not have encountered otherwise.

In conclusion, interdisciplinary study can help bridge the gap between academia and industry by bringing together experts from different fields to collaborate on research and development projects. This collaboration can lead to the development of new ideas and technologies that are both scientifically innovative and commercially viable. Moreover, interdisciplinary study can help students prepare for careers that require both technical expertise and a broader understanding of social and ethical issues, ultimately leading to a more well-rounded and socially responsible workforce.

## **Lead by examples**

There are many examples of engineers who have successfully applied humanistic studies in their work. Here are a few notable examples:

1. Elon Musk: The founder and CEO of SpaceX and Tesla, Elon Musk has been vocal about the importance of humanistic studies in engineering. He has stated that he believes engineers should study philosophy to develop a better understanding of the ethical implications of their work. Musk has also been a vocal advocate for sustainable technologies, and his work at Tesla has helped to popularize electric cars and solar power.
2. Emily Pilloton: Emily Pilloton is an industrial designer and founder of Project H ([now called Girls Garage](#)), a nonprofit organization that uses design to address social issues. Pilloton has worked on a variety of projects, from designing school furniture for students in low-income communities to building community gardens in rural North Carolina. Her work demonstrates how humanistic studies such as social justice and community development can inform engineering design.
3. Ayah Bdeir: Ayah Bdeir is the founder and CEO of littleBits, a company that produces modular electronics kits for children. Bdeir has a background in computer engineering and interactive design, but she also studied sociology and anthropology. Her work at littleBits demonstrates how an understanding of humanistic studies can inform the design of technologies that are accessible and engaging for people of all ages and backgrounds. She started littleBits Electronics with the goal to “put the power of electronics in the hands of everyone, and to break down complex technologies so that anyone can build, prototype, and invent.”
4. Neri Oxman: Neri Oxman is an architect, designer, and professor at the Massachusetts Institute of Technology (MIT). Her work combines architecture, engineering, and biology to create innovative new materials and structures. Oxman’s work demonstrates how an understanding of biology and ecology can inform engineering design,

and how humanistic studies can inspire new approaches to sustainability and environmental stewardship.

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In conclusion, these examples demonstrate how engineers who incorporate humanistic studies into their work can create innovative and socially responsible solutions to complex challenges. By broadening their knowledge in humanistic studies, engineers can become more well-rounded professionals who are better equipped to address the complex challenges facing society today.

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