Being an Ethical Engineer: Personal Agency and Values

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Some pesky details

- Today is the last class!
- If you submit FCE (and your teammate does) you get two extra days for lab 5
  - Please ping me on Slack by Dec 4th to let me know that your team has submitted
  - If you submit FCE, new deadline is Dec 6th
- The instructor on record is only Akshitha Sriraman: So, please enter feedback for Akshitha alone when filling out the FCE
  - If you have any feedback for Brandon, you can include it in the comment text boxes

The “Crisis” of Ethics in Technology and Engineering

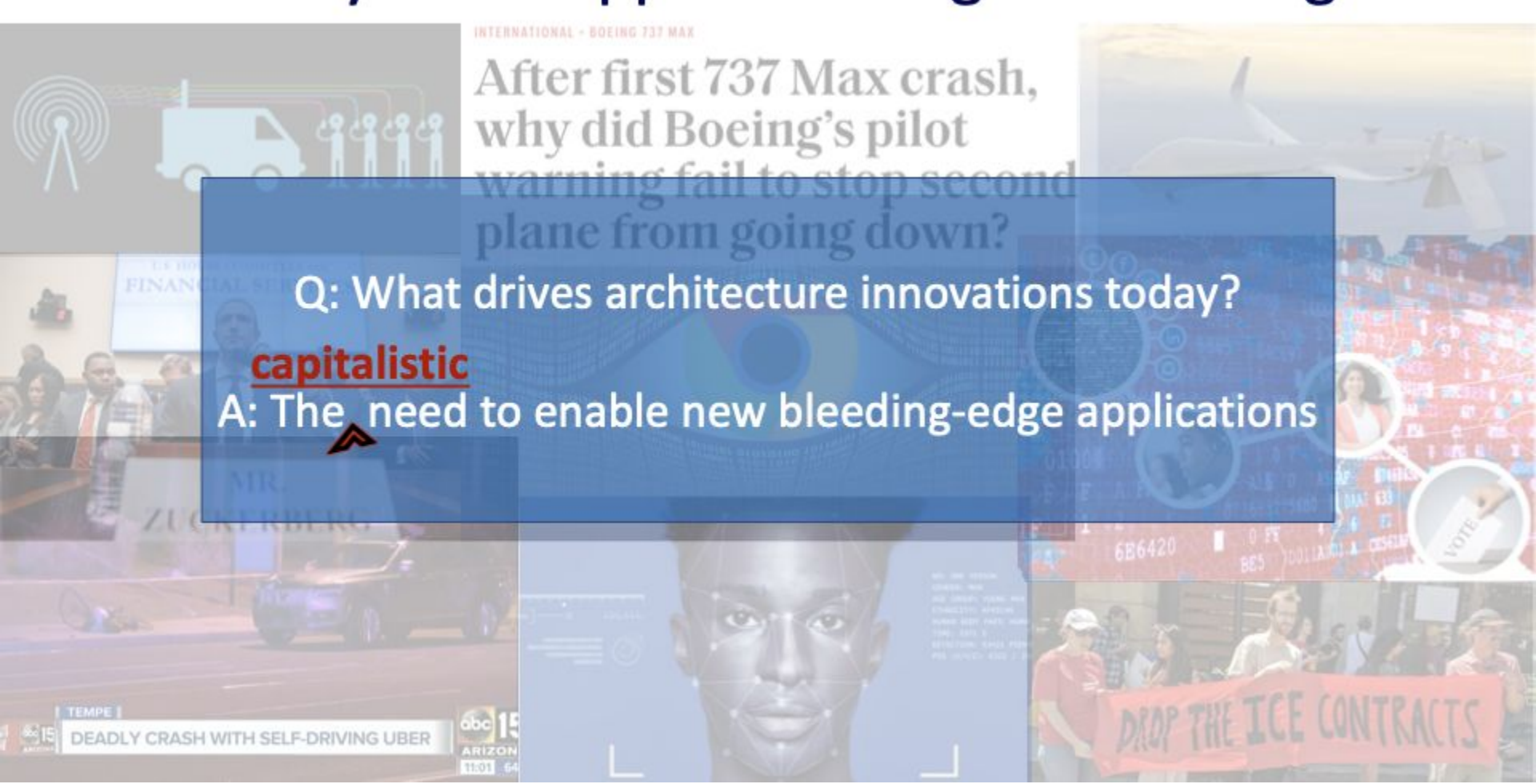
- With each passing day, the question gets more pressing:

  HOW DO WE BRING ETHICS INTO TECHNOLOGY AND ENGINEERING?

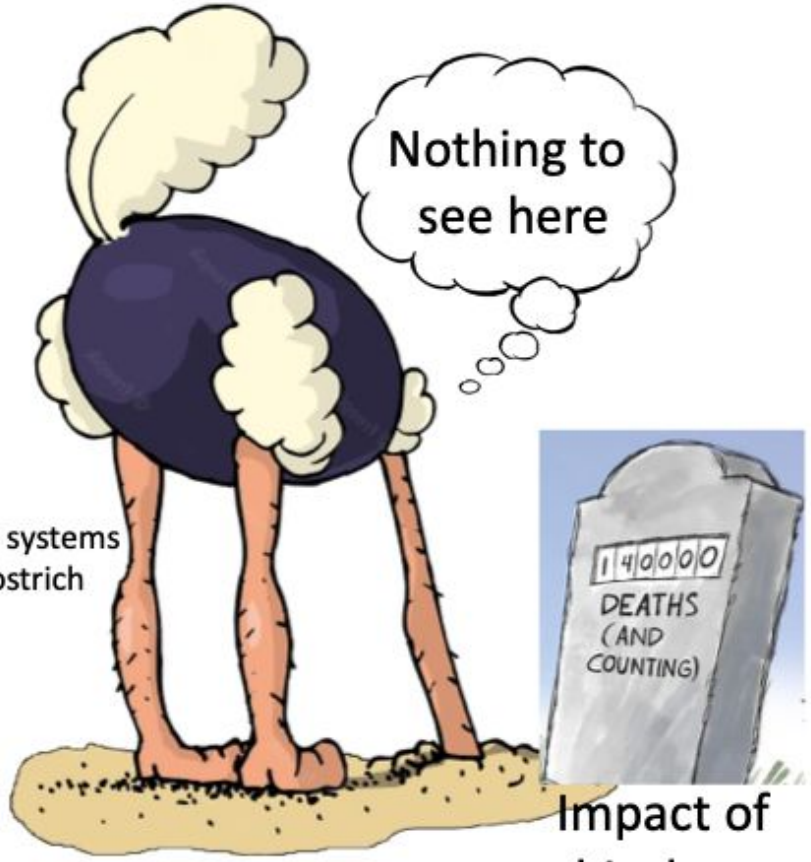
- It seems we rarely want to ask the hard questions:
  - Will people choose doing the right thing over doing the profitable thing?
  - When is the right time to speak up at work?
  - Even if we can do something, should we do it?
  - What sacrifices should we be making to change the industry?

INTERNATIONAL • BOEING 737 MAX

After first 737 Max crash, why did Boeing's pilot warning fail to stop second plane from going down?


INTERNATIONAL - BOEING 737 MAX
After first 737 Max crash, why did Boeing's pilot warning fail to stop second plane from going down?
Q: What drives architecture innovations today?
capitalistic
A: The need to enable new bleeding-edge applications
TEMPE
DEADLY CRASH WITH SELF-DRIVING UBER
DROP THE ICE CONTRACTS

Time to lift the systems ostrich's head from the sand



The systems ostrich

Impact of unethical systems

Contrary to popular belief, capitalism does not do innovation well – instead suppressing or appropriating it.

Great innovations have never emerged from capitalism, but always from utopian moments that occur behind the capitalist's back.

- Bob Hughes

Great Power = Great Responsibility

- As a (CMU-trained) engineer, you will be at the apex of privilege and power
  - You will be recruited to top jobs, you'll have an elite network, you'll have access to money and resources, and you'll have an incredible mind to apply to the world's biggest problems.
- Technologists and engineers may well be the most powerful decider in what humanity will look like in 20+ years. It will shape our personal habits, economy, and environment.
- *Computer technology* is bound into everything! Try to name a business sector or life practice that technology, software, and computing systems are not influencing.
- Importantly, you will be asked to create things for people who more often than not have no real understanding of how the technology works or what the options. You're a 21st Century alchemist as far as the general public is concerned.

→ Would you create things that you wouldn't want your own family or community to have/use? What role will you take in accelerating or slowing down the biggest problems in society?

Developing your Moral Agency

- As we continue to collect data, build machines, and develop digital infrastructure, we are structuring our future with no moral compass directing us.
- That is, rather than dealing with moral questions at the level of our teams and through human interactions, we are more and more favoring letting “data” or “machine intelligence” choose our destiny, and allowing for only what the path of least resistance in the market dictates.
- Zeynep Tufecki describes this as a “crisis of moral agency”

Having moral agency means knowing when our actions intersect with our morals and articulating the dilemmas involved to highlight consequences, determine trade-offs, and execute a path forward intentionally.

→ Every single person in an organization has agency to highlight ethical concerns and place friction on actions that are heading toward the unethical. **Don’t let the hierarchy of work fool you - senior management and government are often blind to the issues and are relieved when the easy path (ie., do nothing) is offered to them.**


INTERNATIONAL - BOEING 737 MAX
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ZUCKERBERG
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Your Personal Values Matter!

- The path toward an ethical career starts with you understanding your own values
- Recent history has alienated individuals from the cultivation of personal values
  - “No religion or politics” or “no drama” at work
- We are seeing a lash back as local, national, and global crises are being piled onto younger generations who often feel cynical about the world
- However work without purpose leads to quicker burnout, poor mental health, and feelings of regret in the long-run.
  - The surprising reality is people who focus on meaningful questions are often rewarded (despite common narratives)

→ **Make sense of your personal values, and use them to develop:**

- **Your “why” in your work**
- **Your red lines around what you will and won’t do**
- **Your inspiration toward innovation**
- **Your community and allies**

Let’s pause to reflect on this.

Questions before we dive into an activity?

Short (Warm-Up) Exercise: 5 minutes

- Work by yourself or with 1-2 peers seated near you
- Try to jot down 1-2 personal values that you feel are important to your personal sense of morality
- Now use the following scenario to attempt to translate this value

You work for a consulting firm that specializes in the development of distributed computing systems. A large client (think AWS), has hired you out to aid in the redesign of their metrics for building new data warehouses. They have a plan to develop dozens of new data centers across North Africa and South America, but are being pressured to consider social and environmental impacts more carefully.

What designs, implementations, and ultimate use cases would be in line with the values you listed above?

Is there a metric you add to the system design process to evaluate the extent to which this value is being upheld in the implementation?