Maya Humston

2040 Now Opinion Editorial

Sustainability in Tech: The Missing Link

For the first 18 years of my life, I lived in a rural town in southern Virginia. My backyard was forest, my childhood painted green. Both my parents are environmental scientists, so I grew up immersed with both the academic perspective and the physical surroundings that taught me appreciation for nature.

I couldn't wait to leave.

When my acceptance letter to New York University arrived — and by extension, my acceptance into New York City itself — I was ecstatic. For all I valued my granola upbringing, cities whispered promises of modernity, total immersion into technology. Constant motion, constant progress — I craved it.

I quickly found myself drawn to computer science. Something about the math, the logic… there's comfort in numbers. The same hyper-independent nature that brought me to NYC also rejected the disciplines of my parents. Geology, ecology, no thank you. Give me lines of code any day.

It took a year for me to realize that something was missing. Despite my passion for programming, I found that I couldn't be true to myself if I didn't incorporate sustainability into my education here. I may not enjoy ecology, but that didn't mean there wasn't a place for me in this ever-growing field of environmentalism. I just had to find it.

I've attended academic lectures and professional seminars searching for my niche. One stood out — in a lecture about "how to find a job in sustainability", the speaker listed three

categories of sustainable jobs, positing that everyone interested in furthering sustainability must fall under one category: education, policy, or business.

So where do I fit in?

I'm a computer scientist at heart. My skill set does not lend itself to educating, politics, or business.

There is a critical gap in the curriculum of STEM students where human-environment interaction should fit. Environmental studies is not all conservation, social interaction, and sustainable policy. Environmental science is also technology and engineering. It's also *me.*

The applications of technology in environmental science are numerous. Climate modeling is more important than ever, and scientists are beginning to use machine learning to improve their power and reach. Carbon capture devices, while still in the early stages, will prove crucial to reducing atmospheric greenhouse gases. Any major appliance or vehicle will soon be seeking ways to improve their energy efficiency, if they haven't already. I see these applications on the horizon, but I have no idea how to engage with them as a student.

There is a major at the NYU Tandon school of Engineering called Sustainable Urban Environments. Or rather, there *was* a major — as of about a year ago, the website has been updated to display the words "*Applicants are no longer being accepted for this program.*" During its life, the program took a multidisciplinary approach to urban design, emphasizing sustainability as a critical factor of future development. (Sustainable Urban Environments) Today, as senior Elaine Yi writes for NYU News, the current students in the program have been all but abandoned by the school. In a time when sustainable development is more important than ever, even the most dedicated students are struggling to pursue these studies.

Although the school offers environmental engineering classes, there's no environmental engineering major. Very little in the core encourages an engineering student to explore sustainable technology further. "In my own senior-year capstone design class for mechanical engineering," says Yi, "sustainability was merely shoved in as a topic. I can't recall a time when a professor had ever gone over it in detail after almost four years at Tandon."

In my computer science classes at the College of Arts and Sciences, it's as if climate change doesn't exist at all. Of course it's not an easy topic to incorporate into discussions of parallel computing or algorithmic time complexity, but the rigid curriculum lacks even a basic consideration of ethics. In a world of racist algorithms, questionable AI, and yes, climate change, social and environmental ethics are critical considerations for the modern computer scientist.

Computer science and engineering is supposed to be a field of progress and innovation, so why are we so slow to adapt to the modern ethical landscape?

Former Google engineer Yonatan Zunger declared over five years ago, responding to the infamous Cambridge Analytica scandal, that "Computer science faces an ethics crisis." Inherent in the discipline is a cognitive disconnect between innovation and consequence. According to Zunger, "Software engineers continue to treat safety and ethics as specialities, rather than the foundations of all design; young engineers believe they just need to learn to code, change the world, disrupt something." (Zunger)

It's hard to overstate how dangerous this is. We have millions of tech innovators building the foundations of our future who don't think they have a responsibility to protect the lives their tech will inevitably impact. *It's my job to build the tech; it's someone else's job to consider the implications.* (Fiesler) Progress is made for progress' own sake, with no consideration of the long term effects.

The impulsive solution for institutes of higher education may be to simply create a standardized ethics and sustainability class and add it to the core for every student, regardless of their major. Yet, simply *informing* students of such issues is not enough. Someone studying to become an environmental educator cannot approach ethical dilemmas the same way as an entrepreneur. For budding computer scientists, "teaching the subject outside a technical context can result in students seeing it as irrelevant to them," writes Casey Fiesler for *Medium.* Without integrating social and environmental considerations with a student's individual studies in a meaningful way, you may as well not teach it at all.

Environmental ethics are no longer optional.

NYU prides itself at being a leader in higher education for sustainability and modern social issues. The 2040 Now initiative is proof of that. But the biggest job of this esteemed university is educating the future generation, preparing them to enter the world as it is. Environmental science is in dire need of people with every imaginable skill set. As we enter a more uncertain future, sustainable technology will be crucial to addressing the unpredictable challenges humanity will face.

Now is not the time to dispose of sustainability programs, but a time to expand them.

Perhaps the only thing that unites the business majors, journalism students, and pre-med masochists at any university is this — we are all under threat. Climate change is the single greatest challenge facing humanity today. We all have the duty to contribute our unique skills and perspectives to ensuring a habitable world beyond the year 2040.

Without an unprecedented level of interdisciplinary collaboration, our future is not guaranteed.

So let's set the precedent. Let's incorporate human-environment relationships into every discipline. Let's facilitate conversations that bring in diverse perspectives from every corner of this esteemed university. And most of all, let's create a curriculum that encourages students to explore sustainability as an option, no matter where their academic passions lie. Let's embrace sustainable technology. The environmental movement cannot survive without the innovators, the technologists, the builders and creators.

As NYU's 2040 Now initiative proclaims, "Sustainability is not a spectator sport." As an academic institution, NYU has the responsibility to adapt its curriculum to bring people off the sidelines.

I need you.

And you need me.

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