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Staying relevant: A professor's insights on what makes engineers more employable

The world won't slow down to accommodate us. But there's a profound opportunity in this reality: as routine tasks become automated, the need for people who can learn, adapt, think critically, work across disciplines, and leverage their uniquely human strengths has never been greater, notes Prof. Aalok Thakkar of Ashoka University.

By CNBCTV18
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Three years ago, when I completed my PhD in engineering, I was anxious about the shift from student to professional life. Now, as a professor, watching my students wrestle with the same transition reminds me just how unsettling that moment can be.

What strikes me most isn't the similarity but rather the change: The question I now hear constantly isn't "What should I learn?" but "How can I stay relevant?"

That question keeps people up at night. And it should.

If Your Job Is Pressing Buttons, You're Replaceable

In the early 2000s, there was a profession called a lift man: someone whose entire job was to operate elevator buttons for passengers. It seems quaint now, almost comical. The entire occupation vanished due to intuitive design and people learning to press their own buttons. Today, we're witnessing this same pattern accelerate across countless professions.

Here's an uncomfortable truth: if your primary value is pressing buttons, whether literal or metaphorical, you're vulnerable. It doesn't matter if those buttons are on a machine, a keyboard, or buried in lines of code. Tools are getting better, workflows are becoming more automated, and entire categories of "routine engineering" are being compressed into software. If your work consists mainly of following established procedures without deeper understanding or judgment, automation or someone willing to work for less will eventually replace you.

This isn't meant to discourage, but to illuminate. The engineers who truly thrive aren't just the ones who execute—they're the ones who understand, adapt, and create value beyond the mechanical. And perhaps these are the strategies that make that possible:

Strategy One: Master the Art of Learning

The most employable people aren't necessarily those who know the most today. They're those who can learn what's needed tomorrow. This requires building a foundation of fundamental knowledge that transcends specific tools or trends.

Understand the principles that underpin your field. Take rigorous courses in mathematics, sciences, and design fundamentals. When a new programming language emerges, you'll learn it quickly because you understand computational thinking. When materials science advances, you'll integrate new materials because you understand physics.

Cultivate intellectual agility by deliberately putting yourself in learning situations. Audit a course outside your department. Work on a research project that forces you to master unfamiliar tools. Collaborate with people whose expertise differs from yours. The ability to transition from one domain to another, to pick up new frameworks, and to question your assumptions matters more than any single technical capability you possess today.

In practice, this means resisting the hype cycle. Every year brings a new "revolutionary" tool or technique that everyone rushes to learn superficially. Don't just learn prompt engineering or use a finite element analysis package, but try to focus on the foundations of the subject. The person who knows why a tool works will always adapt faster than the person who merely knows how to use it.

And most importantly: read widely. Your education didn't end with your degree. It's barely begun!

Strategy Two: Become Interdisciplinary

The most successful CEOs don't just understand business operations—they understand their markets, their customers' psychology, regulatory environments, and emerging technologies. The best physicians don't just memorize anatomy—they understand biochemistry, psychology, statistics, and increasingly, data science and AI. Similarly, the best engineers cannot afford to remain in technical silos.

Modern problems are rarely purely technical. They exist at the intersection of technology, business, human behavior, ethics, environmental impact, and social systems. Those who can navigate this complexity, who can speak the language of multiple domains and synthesize insights across disciplines, becomes irreplaceable.

This might mean understanding the business case for your technical decisions. It might mean studying how humans actually interact with the systems you design. It could involve learning enough about policy and regulation to anticipate how your work will be constrained or enabled by governance. You don't need to become an expert in everything, but you do need to become conversant in the domains adjacent to your work. Build bridges between your technical expertise and other fields. Collaborate with people whose expertise differs from yours. Develop the humility to recognise what you don't know and the curiosity to learn enough to work effectively across boundaries.

Strategy Three: Develop Uniquely Human Skills

As automation and artificial intelligence handle more technical tasks, the skills that machines cannot easily replicate become increasingly valuable.

Communication stands at the forefront. Those who can translate complex technical concepts for non-technical stakeholders, who can write clearly, present persuasively, and listen actively, multiplies their impact. Your brilliant solution means nothing if you cannot convince others of its value or coordinate its implementation.

Problem-finding matters as much as problem-solving. While machines excel at optimising known, well-defined problems, we excel at recognising which problems are worth solving in the first place, at asking questions no one thought to ask, and at making leaps that connect disparate ideas in novel ways.

And finally, and most importantly, ethical judgment cannot be automated. If you are no longer pressing buttons, your decisions will have consequences for safety, privacy, equity, and the environment. The ability to recognise ethical dimensions, reason through competing values, and take responsibility for your work's impact is irreplaceable human territory.

Develop these capabilities deliberately through collaborative projects, coursework, and practice. Explain your work to diverse audiences. Engage with the ethical implications of your field. These skills won't appear on a technical exam, but they'll define your career trajectory.

The Path Forward

The world won't slow down to accommodate us. But there's a profound opportunity in this reality: while routine tasks become automated, the demand for those who can learn, adapt, think critically, work across disciplines, and leverage their humanity has never been higher.

Don't be a lift man. Be the person who solves problems that haven't been reduced to button-pressing yet. Your employability isn't about what you know today. It's about who you're capable of becoming tomorrow.

—The author, Aalok Thakkar is Assistant Professor of Computer Science at Ashoka University. The views are personal.

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