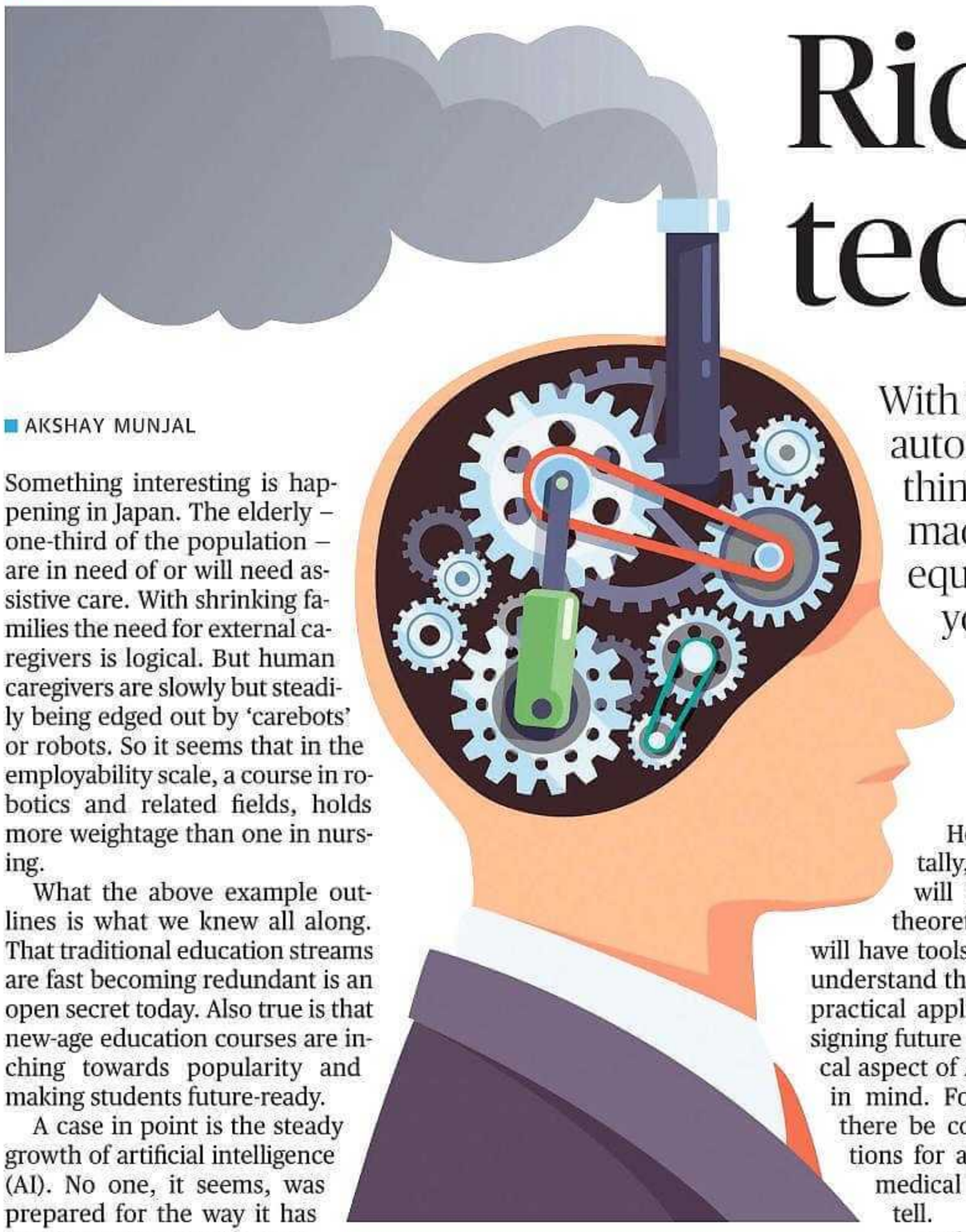
Ride the technology wave



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Something interesting is happening in Japan. The elderly – one-third of the population – are in need of or will need assistive care. With shrinking families the need for external caregivers is logical. But human caregivers are slowly but steadily being edged out by 'carebots' or robots. So it seems that in the employability scale, a course in robotics and related fields, holds more weightage than one in nursing.

What the above example outlines is what we knew all along. That traditional education streams are fast becoming redundant is an open secret today. Also true is that new-age education courses are inching towards popularity and making students future-ready.

A case in point is the steady growth of artificial intelligence (AI). No one, it seems, was prepared for the way it has crept up upon us. What many believed would 'happen in the future' has already begun to happen. In less than a decade, it would be everywhere and 'humans' that can work on sophisticated implementation of AI would be needed. Machine learning, soft computing and AI, along with neural networks and fuzzy logic, are going to gain importance.

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With increasing automation and thinking machines, start equipping yourself with skills of the future

However, fundamentally, all these courses will be based on solid theoretical principles and will have tools that help students understand the concepts through practical applications. While designing future courses, the practical aspect of AI needs to be kept in mind. For example, would there be computer specialisations for application of AI in medical field, only time can tell.

And as the debate about the dangers of promoting AI seems valid, what remains a grey area is the role of humans. Would they be minders to machines? With increased automation and thinking machines, keeping the systems and networks secure will be critical. The need for security experts who can keep computing infrastructure secure will rise. The emphasis of future courses on cybersecurity would be on autonomously communicating machines. The loss of life is the new threat from hacking as became apparent recently when mass spoofing of GPS signals of sea vessels was detected, putting them off course and on path to collision.

March of the robots

Along with machines, the robots are coming, and they are marching at a fast pace. They will find space in every corner of our lives, just like smartphones already have. Courses in building, maintaining and deploying metal-bots would become mainstream and would have students enrolling for them. The courses would be designed to include specifics like mechanical, electrical, interface and software part of robotics.

Before the invention of the microscope, microbiology did not exist. Likewise, with rapid advances in nanoelectronics, new and interesting avenues are opening up. Already viewed as disruptive because of the shift it brings about in the way current electronics technology is used and implemented, in the near future, it will find diverse and innovative uses. There will be university courses that will train students on sophisticated uses of nanoelectronics.

While the global move towards electric vehicles will ultimately see the demise of the internal combustion engine, it is likely to give birth to new modes of transport. There already are talks of the flying vehicle ready to be launched. Will the near future, where traditional automobile engineering might lose sheen because of the reduction of moving parts in EVs, place more importance on students working on unconventional modes of transport? The signs all look positive.

Engineering students are already entering operation theatres, observing surgeons for ideas to invent new inventions. Similarly, courses of the future would marry two differing disciplines. Mechatronics or mechanical engineering and electronics could become a common subject. The two engineering disciplines will come together to solve the problems of the future.

Globally, those with knowledge of future technologies are being snapped up by technology giants, or are turning into entrepreneurs and disrupting status quo. The time is more than ripe to clearly understand the needs of the future and adapt our education system accordingly, because, the tide of change is rising fast. One can either stand in defiance and become irrelevant. Or be ready to surf and ride the big one.

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