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In the future economy, strong technical skills must go hand-in-hand with soft skills like empathy and curiosity, said a panel of tech insiders.

AsianScientist (May 7, 2018) – If you're looking for a new job in the high-tech realm of artificial intelligence (AI) and machine learning, you might assume that knowing the most sophisticated and most recent deep learning algorithms would give you an edge over the competition.

Not necessarily so, said Dr Jagannadan Varadarajan, Data Science Lead (Machine Learning) at ride-hailing and logistics company Grab.

"When I interview candidates, I always look for a strong understanding of basic AI, machine learning and statistical concepts. It is always possible to focus only on deep learning, but end up with a shallow understanding of the underlying basics," he said. "What matters most to me is the understanding of the underlying machine learning concepts, rather than understanding just the recently trending deep learning algorithms."

Dr Varadarajan was speaking on 6 April 2018 at a panel discussion on future skills, held as part of the 'Artificial Intelligence—Are You Ready?' conference organised by Singapore Management University's (SMU) Master of IT in Business (MITB) programme. The panel, moderated by Professor Steven Miller, SMU Vice Provost (Research), also comprised Mr Laurence Liew, Director, AI Industry Innovation at AI Singapore; Mr Joon-Seong Lee, Managing Director, Accenture Applied Intelligence, ASEAN Lead; and Mr Srikiran Raghavan, Head of APAC, Marketing Partners Program at Facebook.

Launched in 2007, the MITB programme is a professional education programme that equips graduates to apply deep technology to the world of business. The programme's new Artificial Intelligence Track, now open for applications till 31st May 2018 for the August 2018 intake, is the first of its kind in Southeast Asia, and takes an integrated approach towards melding AI methodologies into business domains.

Marrying the hard and the soft

In a vast, fast-moving field like AI, a solid foundation in AI fundamentals is critical for candidates seeking technical roles, the panel agreed. At the same time, candidates also need to be versatile, especially if they are applying for jobs at small companies or startups which cannot afford the luxury of having dedicated teams for different layers of the tech stack, said Mr Liew.

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"We look for people who can handle a broad range of AI workloads and infrastructure, and who can do the job from end to end," Mr Liew explained, adding that an insatiable curiosity and a penchant for not always doing things by the book are also assets. "It's by going off-curriculum that innovation happens."

Other speakers further emphasised the importance of soft skills—in particular, empathy.

"Some people come in with deep skills but don't have a good understanding of how to work with others, or how to look at things from the other person's perspective," observed Mr Raghavan, who, in addition to managing his own team, also works with a range of companies that Facebook recognises as marketing partners. "There are often political barriers within companies, and so we need individuals who understand how to help people work together."

For Mr Lee, the ideal candidates for an applied intelligence consulting role at Accenture should be able to use both hard and soft skills to their advantage.

"I always say that you don't come to Accenture to be a data scientist; you come here to be a data science consultant. Ultimately, you need to take what you do in machine learning and apply it. We need candidates who are able to marry the science of machine learning and data with the art of problem solving," he explained.

Translating AI into outcomes

While machine learning algorithms and computer code may be fresh in the minds of recent graduates, many mid-career workers looking to make the switch into the tech industry lack formal training in AI or related fields. Nonetheless, this group of people can still make important contributions to businesses, and indeed are highly valued for their domain knowledge, agreed the panel.

"The question is whether you can be an effective translator of AI—that is, able to relate the output of AI to functional use cases that capture the imagination of your clients," said Mr Lee.

While these "functional translators" may not know how to write code, their high-level understanding of AI concepts, together with a wealth of domain knowledge, enables them to orchestrate a business model or think creatively about the innovative ideas they can bring to a business, he added.

At a company like Grab, which offers a variety of services ranging from ride hailing to logistics and e-payments, agility—the willingness to work on any problem that is of need to the company—is an important quality in a mid-career hire, said Dr Varadarajan.

"A person who has worked on computer vision should be equally ready to learn skill sets in natural language processing, text mining, marketing or otherwise, applying machine learning to wherever the problem is," he explained. "It is the problem that is important, not the domain of the problem."

Change at every level

Individuals are not the only ones who will have to rethink their skill set for the future. In the face of technological disruption, large and small companies alike will also need to effect change on an organisational level, agreed the panel.

When the rate of change in an industry is accelerating as we are currently experiencing, companies that are only willing to make small, incremental changes to their business models are likely to be left behind, said Mr Raghavan.

"When a company is only willing to take a few small iterative steps when there is an urgent need for major change, it will lose talent," he cautioned. "This happens not only at the lower end with entry-

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level employees who feel disillusioned with the company and its leadership, but also at the mid- to senior levels, where leaders feel that they don't have the empowerment or the endorsement to go and make changes."

In closing, Professor Miller said that technological advances will inevitably result in both job displacement and job creation. He referred to a recent academic study by two economists which suggests that technology's longer-term benefits—lower prices and the creation of new jobs and industries—will eventually counteract the negative effects of displacement. However, while the displacement effects are nearly certain and will occur in the shorter term, the job creation effects will only be realised if the new technology is used in ways that result in high productivity increases and the creation of new types of services.

"Our imperative is not only to use the new AI technology, but to use it well enough so we are sure to achieve the productivity gains and the creation of new services necessary to realise new jobs and economic growth," Professor Miller exhorted the audience.

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