

Harnessing artificial intelligence

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THE Covid-19 pandemic has had a significant, worldwide impact on the economy and employment in various sectors.

As a result of international lockdowns, changes had to be made in order for life to continue with as little disruption as possible.

This has largely been made possible with artificial intelligence (AI), a branch of computer science that allows machines such as robots, computers, telephones, applications or systems to perform certain tasks similar or beyond human intelligence, according to Universiti Malaysia Kelantan Department of Data Science lecturers Associate Professor Dr Nooraini Yusof and Dr Muhamad Akmal Remli.

Nooraini and Akmal, who are both research fellows at the Institute of Artificial Intelligence and Public Data, are of the opinion that AI technology is rapidly developing and is around us in our everyday life.

"Many elements of AI, especially those embedded in smartphones, have been successfully produced. These include the ability to predict one's age, suggesting words and sentences to be written in emails, suggesting items to be purchased on the online platforms, and more.

"AI technology impacts various sectors, including video games, self-driving/self-parking capabili-



Dr Nooraini Yusof

ties and personal assistants which can manage tasks through voice commands only.

"All these technologies cannot be achieved without proper research, data and AI technology development methods," they said.

To strengthen AI technology and its adoption in the country for the coming year, adequate training and knowledge are required.

"Many people use the word AI arbitrarily without basic knowledge of the term. Therefore, we must first know the true concept of AI and methods related to this concept such as machine learning, deep learning, neural network, optimi-

sation and others.

"We also need to know what are the limits and capabilities of AI now and in the future.

"Can everyday tasks be completed with AI? Is there a difference between an embedded AI system/application and a conventional system? For those who are still new and want to learn more about AI, the easiest way to do so is by going on the Internet or following courses offered by various parties," said Nooraini.

Another important aspect is the accessibility and quality of data, as automation or prediction resulting from AI technology is based on ex-

isting data. Abundant and quality data will affect the effectiveness and accuracy of AI-based applications.

"For example, to build an AI application that can help predict a job that is appropriate for a student, adequate and quality data will be needed.

"The application requires data from at least 1,000 former students along with relevant attributes such as interests, grades obtained, study methods and occupations. This will enable the computer to study the existing data effectively and then be able to make accurate predictions about the type of job that is most suitable for a student.

"Adequate use of data is also important in various other sectors, such as health. For example, in the field of medicine, visual computing technology using certain AI techniques is able to detect early stage brain tumours. Such technology requires at least 1,000 magnetic resonance imaging (MRI) pictures of patients with variations of brain tumours for it to make a good prognosis. Inaccurate predictions will result if the AI is trained with insufficient MRI image samples.

"Therefore, in order to develop good forecasting, it is necessary to first resolve issues related to accessibility and data quality," said Akmal.

"Next year and post-Covid-19, various problems can be solved

with the help of AI technology. Researchers should take this opportunity to help rebuild the country in various sectors using their expertise in the field of AI.

"The time has come for research results that are fundamental in nature to be translated into real-world applications," said Nooraini.

Various initiatives from different parties need to be continued and strengthened to increase public awareness of AI.

These include providing financial assistance to hold workshops and training for graduates, digital entrepreneurs and the general public.

"The industry needs to get a special fund injection to stimulate the implementation of AI technology in improving their operations.

"The research allocation from the government should also be continued to enable researchers among academics to continue to produce high-impact AI research that can benefit the country," added Nooraini.

Both researchers agreed that AI technology is growing rapidly and should be made one of the main agendas of the country.

"AI will become smarter over time. Therefore, we must continue to explore and provide opportunities for this technology to grow so that various innovations can be produced while driving economic growth and national development."