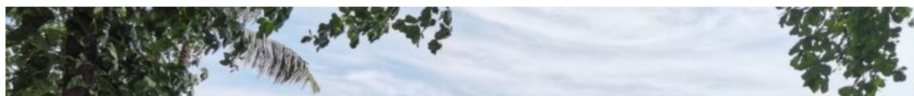




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SG:D Techblazer 2020 Awards recognises digital innovation efforts



BioMind is an AI company specialising in medical imaging AI applications, and has developed predictive applications to assist physicians in imaging diagnosis and recommend treatments. PHOTO: BIOMIND

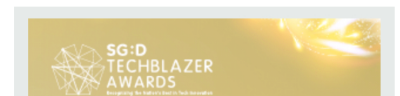
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Healthcare tech company BioMind bagged the top accolade last year with its cutting-edge AI technology that detects strokes and other neurological disorders

From digital payments to telemedicine and robotics, technology has played a key role in these extraordinary times. Cutting-edge technologies have helped reduce the spread of Covid-19 while helping businesses stay open. According to a [recent World Economic Forum report](#) in June, technology has also helped to make societies more resilient in the face of the pandemic and other threats.

Singapore is no exception, and companies here are recognised for their efforts via the Singapore Digital (SG:D) Techblazer Awards. Now in its third edition, the event is jointly



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organised by the Infocomm Media Development Authority (IMDA) and SGTech. It is the nation's highest accolade for Singapore-based companies that exemplify the spirit of innovation in technology development and adoption.

Last year, 298 organisations filed 304 applications in three awards categories —Most Promising Innovation, Best Adoption and Student Techblazer. Out of these, 10 were lauded in November, including BioMind which was named the Gold winner in the Most Promising Innovation category.



Established in 2017, the artificial intelligence (AI) company specialising in medical imaging AI applications develops predictive applications to assist physicians in imaging diagnosis and recommend treatments. Its award-winning technology BioMind® is a CE-marked and HSA-approved AI application that assists doctors in analysing medical images for neurological disorders including stroke, cerebrovascular diseases and brain tumours.

It detects abnormalities in MRI and CT scans, recommends possible conditions and automatically generates an evaluation report for doctors to review — all within seconds. “Our mission is to empower physicians with machine intelligence so patients around the world can benefit from fast, accurate and consistent diagnosis and personalised treatment,” said its chief executive officer Raymond Moh.

The rise of machine intelligence (or AI) has seen many promising uses in industries such as finance, retail and manufacturing, yet healthcare is one of the last to take off due to its complex environment, Mr Moh noted.

Hailing from a data science background, Mr Moh and his team have enjoyed success applying sophisticated AI techniques such as deep learning in recognising objects in images. “Equipped with the know-how, we felt the impetus to contribute in meaningful and challenging areas, and enabling smart healthcare becomes our biggest motivation,” Mr Moh added.

EARLY INTERVENTION AND PREVENTING MISDIAGNOSES

As the brain is the most important yet complex organ in the human body, timely intervention is necessary when treating brain disorders to reduce the chance of severe damage. However, diagnosing brain disorders has often been challenging given that a wide spectrum of conditions exists, and look-alike conditions can result in a wrong diagnosis.

“The early symptoms of neurological conditions are also subtle and hard to be seen by the naked eye on medical imaging, leading to blind spots,” Mr Moh explained. “Prognosis is also difficult. For example, physicians will need to rely on their judgement to predict the stability of a hematoma for a patient suffering from a haemorrhagic stroke. Erroneous or late judgment can result in disability or even death.”

Since medical images take up 90 per cent of all the medical data, BioMind believes that deep learning could be applied to detect abnormalities in medical imaging. This could save a lot of time for routine analysis, while flagging severe cases early. “We have had some initial success, and attempted to push the boundaries by continuously training our machine on past data.

“By combining the knowledge of brain specialists, it learns to recognise characteristics of the different conditions. In practice, when coupled with the doctor’s evaluation, the workflow, diagnostic and prognosis accuracy can all be enhanced.”

One of the greatest challenges is combining both machine learning expertise and the clinical expertise of medical professionals. Mr Moh explained that this is because deep understanding

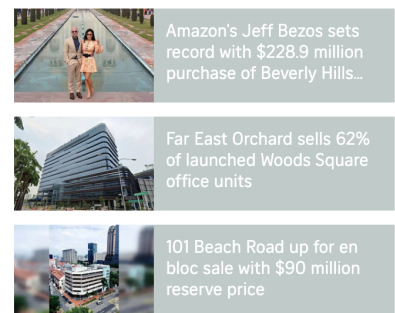


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and integration of clinical knowledge is necessary to co-create the product so that it can be suitable for clinical use. His team also needs to work very closely with the stakeholders including hospital users and health regulators who are new to the technology.

BioMind® now has the ability to self-learn and improve through cycles of predictions and doctors' revisions. This helps them reduce misdiagnoses and missed diagnoses. Hospitals using BioMind® reported lesser blind spots, while being able to provide early intervention for patients. They also reported at least 20 per cent savings in time, which allows hospitals to overcome manpower constraints while enabling more interaction time for patients and high value-added research activities.

EXPANDING ITS AI APPLICATION



BioMind was named the Gold winner in the Most Promising Innovation category at the 2019 Techblazer Awards. PHOTO: SGTECH

Commenting on the Techblazer award win, Mr Moh said: “It is a prestigious award and the assessment process is a self-discovery journey during which more than 30 judges provide valuable insights to generate sustainable results and global impact. Winning cements the company's position as the AI leader in the medical field, and boosts confidence among our stakeholders in the ecosystem.”

The award has also helped strengthen the fast-expanding company's brand and attracted many global talents to join the company. “Internally, the award has also boosted our employees' morale, which gives us the impetus to scale greater heights,” Mr Moh added.

Going forward, BioMind® will be expanded to analyse CT and MRI scans for major organs such as the lungs, breast and heart. The technology can also be applied in the treatment space; for example, in its research phase, BioMind recently launched a clinical decision support system, BioMind (CDSS), for stroke management. This application combines medical imaging and clinical data to recommend treatment plans supported by clinical publications.

“This is an evidence-based solution aimed at improving the recovery rate of stroke patients and reducing their relapse rates. During the Covid-19 pandemic, we have also developed an AI-assisted solution to detect Covid-19 pneumonia on CT scans. This has been deployed in many hospitals in Asia and Europe to manage the high load and facilitate early intervention, explained Mr Moh.

The company also won a recent award in the World AI Conference 2020 for its contribution in the fight against the pandemic. As Mr Moh puts it, the process of adopting innovation and effecting change is akin to running a marathon and requires a unified effort across the organisation.

“With a clear mandate from the management, the race can start and go on, and with the continuous support from co-workers, it can then be completed. Even so, not all marathons can be successful, and perseverance is key.”



NOMINATE YOUR COMPANY FOR THE 2020 SG:D TECHBLAZER AWARDS

Jointly organised by the Infocomm Media Development Authority (IMDA) and SGTech, this is the third run of the SG:D Techblazer Awards.

The Awards has three award categories – Most Promising Innovation, Best Adoption and Student Techblazer.

Winners would be provided with the SG:D Techblazer marketing and publicity package, and gain access to networking and pitching events, as well as overseas market access opportunities through IMDA programmes and initiatives.

Visit techblazerawards.sg/Application for more information.

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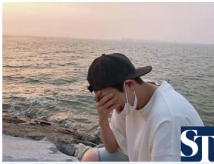
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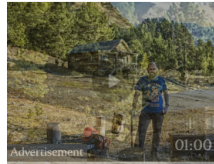
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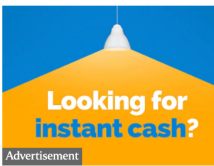
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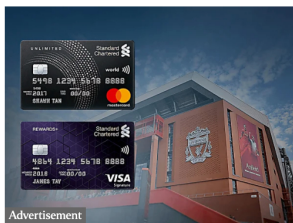
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