Would you get a massage from a ROBOT? Singapore's robo-masseuse 'Emma' begins work to treat back and knee pain

- Emma specializes in back and knee massages, mimicking the palm and thumb
- She uses sensors to measure the exact stiffness of a particular muscle or tendon
- She can calculate the optimal massage required and track a patient's recovery
- The aim is to address workforce shortages and quality consistency in healthcare

By CECILE BORKHATARIA FOR DAILYMAIL.COM

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A robot masseuse specializing in back and knee massages has started work in Singapore today.

Named Emma, short for Expert Manipulative Massage Automation, it mimics the human palm and thumb to replicate therapeutic massages such as shiatsu and physiotherapy.
EMMA: THE FIRST ROBOT MASSEUSE

Emma, short for Expert Manipulative Massage Automation, specializes in back and knee massages, mimicking the human palm and thumb to replicate therapeutic massages such as shiatsu and physiotherapy.

Emma uses sensors to measure tendon and muscles stiffness, together with Artificial Intelligence and cloud-based computing to calculate the optimal massage and to track a patient's recovery over a course of treatments.

Emma is housed in a customized room with two massage beds, located in between both beds.

The company's technology aims to address workforce shortages and challenges with quality consistency in the healthcare industry.

Scroll down for video

Emma massaging a patient autonomously on the left while physician Calista Lim treats another patient on the right. Emma improves the productivity of the clinic as it can do the job of two massage therapists.
computing to calculate the optimal
massage and to track a patient's recovery
over a course of treatments.

Emma was developed by AiTreat, a
technology startup company incubated
at NTU.

The startup is just two-years old, but it's
already valued at SGD $10 million (USD
$7.3 million) after it recently completed
its seed round funding, supported by
venture capitalists from Singapore, China
and the US, including Brain Robotics
Capital LP from Boston.

Using Emma to help treat chronic pain
management has the potential of
creating low-cost treatment alternatives in countries where healthcare costs are high
-and where aging populations have a growing demand for such treatment.

Albert Zhang, who led the development of Emma, said that she was designed to
deliver a clinically precise massage, abiding to the prescription of a qualified
traditional Chinese medicine physician or physiotherapist, without the fatigue faced
by a human therapist.

The bot can massage one patient while
the physician in the room administers
treatments for the second patient,
before switching.

Emma has a touch screen with a fully
articulated robotic limb with six
degrees of freedom - meaning she can
move forwards, backwards, up, down,
left and right, combined with rotation
about three perpendicular axes.

At the end of the bot are two soft
massage tips made of silicon, which
can be warmed for comfort.

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At the NovaHealth TCM clinic, a patient could receive the same consultation and acupuncture but with a 40 minute massage, for SGD $68 (USD$50).

Emma is housed in a customized room with two massage beds, located in between both beds.

The bot can massage one patient while the physician in the room administers treatments for the second patient, before switching.

This means that Emma can always be massaging a patient, maximizing the clinic's productivity, and clinic staff can be reduced from five people to three, as Emma does the job of two masseuses.

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At the end of the bot are two soft massage tips made of silicon, which can be warmed for comfort.

Emma has sensors and diagnostic functions which can measure the exact stiffness of a particular muscle or tendon, and the data collected from each patient is sent to a server in the cloud, and an AI computes the exact pressure to be delivered during the massage procedure.
Emma has a touch screen with a fully articulated robotic limb with six degrees of freedom - meaning she can move forwards, backwards, up, down, left and right, and rotate. At the end of the bot are two soft massage tips made of silicon, which can be warmed for comfort.

The AI can also track and analyze the progress of the patient, generating a performance report that allow's a physician to measure a patient's recovery.

This proprietary cloud intelligence is supported by Microsoft, after Zhang and his teammates won the Microsoft Developed Day Startup Challenge last year.

Once's it's been proven that Emma can improve the productivity and effectiveness of TCM treatments, Zhang says he hopes it could be a business model for others clinics to follow in future.

AiTreat is incubated at NTUitive, the university's innovation and commercialization arm.

The development of Emma is also on the TAG.PASS accelerator program by SGInnovate, which will see Zhang work with overseas teams to target multiple markets such as in the US and China.

CEO of NTU Innovation and NTUitive Dr Lim Jui said harnessing disruptive technologies such as robotics and AI to improve everyday life is what Singapore needs to keeps its innovative edge.

'We are proud to have guided Mr Albert Zhang in his vision to bring affordable healthcare solutions to the market for Singapore, which can alleviate some of the chronic pain problems which our elderly faces,' said Dr Lim.
Running in parallel to Emma's work is a research project to measure and benchmark Emma's efficacy, comparing it to that of a human masseur.

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Clive Histon, Meh, Andorra, about 20 hours ago
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EXCLUSIV

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Kristina after she was groomed for the DailyMail Tour. She looks happier now.

Heidi Klum shows off enviable pins as she skims through some fashion columns. Her legs are the talk of the town!

Selena Gomez is still filming latest drama 'Allen & Laich'. The actress is serious about her film career.

It scared me': June Bundles admits she was scared of marriage.

From stardom? "wants to be normal": Selena Gomez filming latest drama 'Allen & Laich'.

Carey Hart and his new bride... as seen on the Premiere of 'Allen & Laich'.

Suits you: Bonas flaunts her midriff in matching crotch-jeans after calling out Carey Hart. Dad and sappy couple are terminal.

Doctor Who episode 'What the Doctor Ordered' showing at BBC arch. Aberdeenshire, Scotland.

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