Robots **at your service**

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TWENTY years ago, the movie iRobot bounded into theatres and transfixed our ideas of a future where robots are the sleek and sophisticated Sonny, capable of understanding and interacting with the environment, learning, and even exhibiting emotions.

Just about every blockbuster depiction since then, has either dramatically heightened the potential or the perils of robots, a world where machines are no longer just tools, but entities capable of seamlessly blending into our daily lives.

This may come as a surprise to many, but it is AI that is the engine enabling these machines to see, listen, speak and move. And it is the combination of all these abilities that allows a robot to perform every task at a level of autonomy and sophistication previously confined to the realm of science fiction.

Simply put, AI is the software that brings robots — the physical manifestation of a humanoid — to life.

Ten years ago, robotics were confined to just performing repetitive tasks. In a factory, robots could pick up parts and assemble them into a finished product. Or box, label and seal products ready for shipping.

But today with the infusion of AI, robotics engineering has the ability to unleash a transformative power that embodies our five senses and physically get things done!

In fact, robots or bots have since taken on various forms mimicking nature. There are bots that look like dogs that can open doors. There are swarm robots that imitate colonies of ants or bees that are increasingly used in search and rescue missions.

The hardware of robotics is brought together by the brilliance of mechanical engineering, providing the physical infrastructure through the design, development and implementation of the components that enable the robots to move. The marriage of hardware, software and AI skills is what we're beginning to see in the world today, as technology continues to evolve, promising even greater innovation and efficiency.

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> Robots allow us to focus on more creative, strategic and fulfilling activities, paving the way for a richer and more rewarding future

From science fiction to science fact

I must confess, that my first real interaction with a robot up close and personal was at the most unlikely of places — the local mamak near my home. I watched bemused as it navigated the tables and patrons to deliver my meal. I could see the "waiter" coming my way ever so slowly, and waiting with bated breath if the meal was for me or for the next table? "Boss, *teh tarik mana*?"

This begs the obvious question, will robots replace human jobs some day?

Without a doubt, the use case for robots is many — mundane and repetitive tasks for sure, 3D jobs that are defined as dirty, difficult and dangerous like waste management and chemical spill cleanup are best left to machines. Safer for humans too.

Assembly line work in manufacturing is another one, humans can perform other valuable tasks with that freed up time. Farms and oil palm plantations are seriously looking into deploying robots to harvest fruit — cutting fruit bunches without damaging is back-breaking work. But robots can do it. Efficiently.

Robots operate to function in a single task mode. This automatically gives humans the upper hand because we can think and act fast on our feet if needed. But imagine the day, when you walk into a mamak, and the robots uses facial recognition to identify you.

Within a few seconds, the robots know what you ordered the last five times and pick out a favourite. "Hello boss, shall I get you your usual today? *Roti telur banjir, teh tarik kurang manis*?" The fact that the robot identified you, ran through its database of your previous orders and is able to use a multi-language speech recognition engine to convert your response into an order to the kitchen is phenomenal enough!

The technology is already available, mind you and it could not have emerged at a better time for many industries across the globe.

Need for diverse robotic use cases

There is still much to be done to fully harness the potential of AI and robotics. While some global companies may already be spearheading the way robotics are being used, there is much for us to learn and prepare ourselves for.

At TM R&D, we established the Robotics and Sensing Centre of Excellence (COE) because we see the potential of these technologies to improve productivity and efficiency in business.

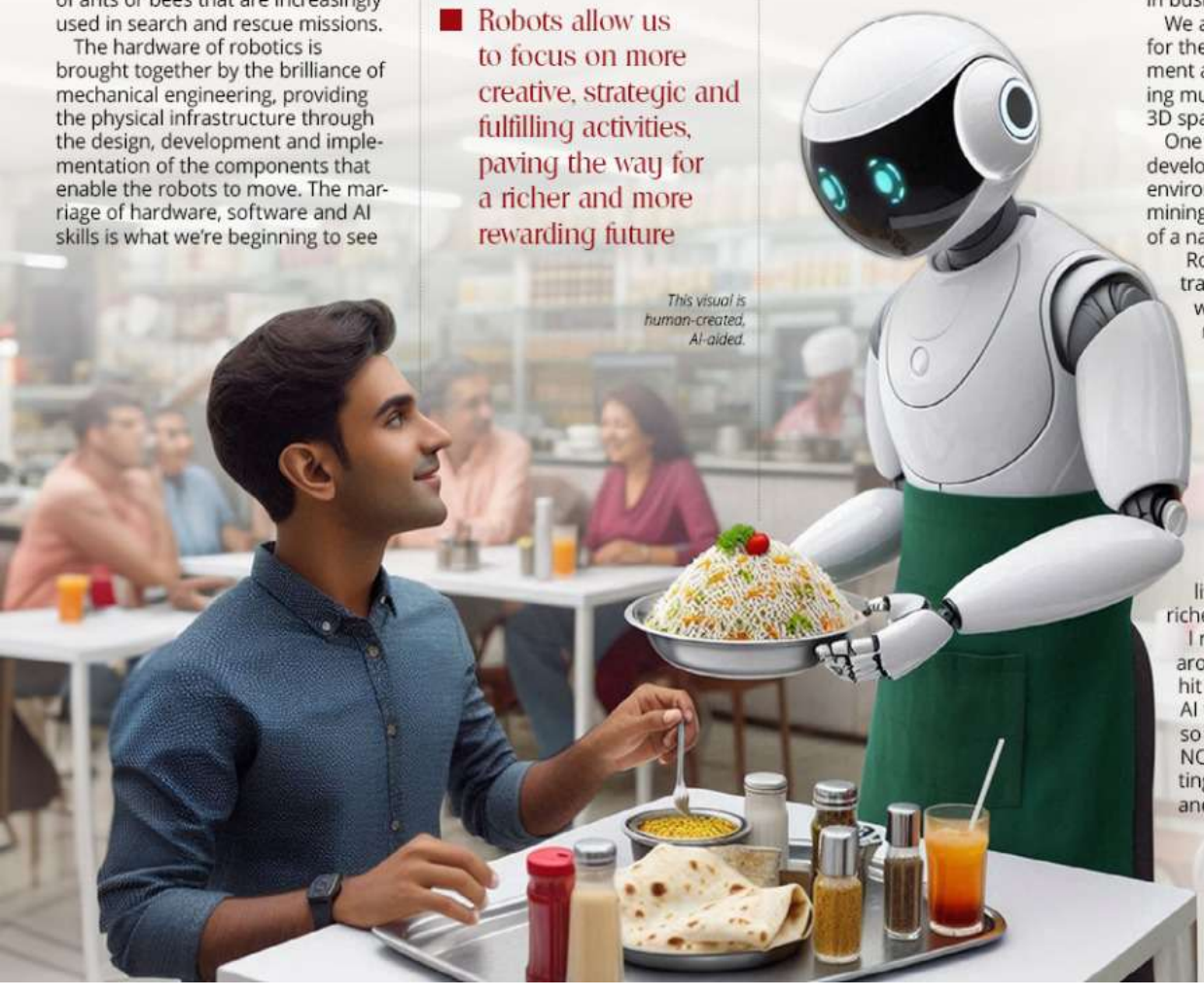
We are working on several projects for the plantation, waste management and healthcare sectors, targeting mundane, repetitive tasks in the 3D space.

One day, we could see more robotic development in safety for hazardous environments like construction and mining, and disaster response in case of a natural catastrophe.

Robots could very well be found trawling the streets to collect waste more effectively. Or nanites bug-like robots that can inspect tree roots to detect rot.

Robotics are still in their early days but are fast becoming a part of our lives. On top of all the business opportunities they offer, robots allow us to focus on more creative, strategic and fulfilling activities, paving the way for a future where our lives are not just easier, but also richer and more rewarding.

I recall a meme being shared around our office recently, which hit the spot for me. It said: "I want AI to do my laundry and dishes so that I can do art and writing, NOT for AI to do my art and writing so that I can do my laundry and dishes!"



This visual is human-created, AI-aided.