Japan roboticists predict rise of the machines

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Japanese roboticist Masahiro Mori suggested in 1970 that the more robots resemble people, the creepier we find them

Set in 2019, cult 80s movie "Blade Runner" envisaged a neon-stained landscape of bionic "replicants" genetically engineered to look just like humans.

So far that has failed to materialise, but at a secretive research institute in western Japan, wild-haired roboticist Hiroshi Ishiguro is fine-tuning technology that could blur the line between man and machine.

Highly intelligent, self-aware and helpful around the house—the robots of the future could look and act just like humans and even become their friends, Ishiguro and his team predict.

"I don't know when a 'Blade Runner' future will happen, but I believe it will," the Osaka University professor told AFP.

"Every year we're developing new technology—like deep learning, which has improved the performance of pattern recognition," he added.

"Now we're focusing on intention and desire, and if we implement them into robots whether they become more human-like."

Robots are already widely used in Japan—from cooking noodles to helping patients with physiotherapy.

Marketed as the world's first "cyborg-type" robot, HAL (hybrid assistive limb)—developed by Tsukuba University and Japanese company Cyberdyne—is helping people in wheelchairs walk again using sensors connected to the unit's control system.

Japanese roboticist Hiroshi Ishiguro believes recent breakthroughs in robotics and artificial intelligence will accelerate the synthesis of man and machine

Scientists believe service robots will one day help us with household chores, from taking out the garbage to making the perfect slice of toast.

Stockbrokers in Japan and around the world are already deploying AI bots to forecast stock market trends and science fiction's rapid advance towards science fact owes much to the likes of Ishiguro.

He previously created an android copy of himself—using complex moving parts, electronics, silicone skin and his own hair—that he sends on business trips in his place.

'Wake up, time to die'

But Ishiguro believes recent breakthroughs in robotics and artificial intelligence will accelerate the synthesis of man and machine.

"As a scientist, I hope to develop self-conscious robots like you see in 'Blade Runner' to help me understand what it is to be human," he said. "That's my motivation."

The point at which that line between humans and machines converges has long been a source of anxiety for some, as depicted in popular culture.

How comfortable will we feel surrounded by autonomous humanoids?

In "Blade Runner", Harrison Ford plays a police officer who tracks down and kills replicants that have escaped and are living among the population in Los Angeles.

The "Terminator" series starring Arnold Schwarzenegger centres on a self-aware computer network which initiates a nuclear holocaust and, through autonomous military machines, wages war against human survivors.

"I can't understand why Hollywood wants to destroy robots," shrugged Ishiguro, who in 2007 was named one of the top 100 living geniuses by

global consultants firm Synectics.

"Look at Japanese cartoons and animations—robots are always friendly. We have a totally different cultural background," noted the professor.

It's not just Hollywood that has concerns over AI.

Tesla's Elon Musk has called for a global ban on killer robots, warning technological advances could revolutionise warfare and create new "weapons of terror" that target innocent people.

But Ishiguro insists there is no inherent danger in machines becoming self-aware or surpassing human intelligence.

"We don't need to fear AI or robots, the risk is controllable," he said. "My basic idea is that there is no difference between humans and robots."

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'Uncanny valley'

The ultimate goal, according to Ishiguro's colleague Takashi Minato, is "to bring robots into society as human companions—it's possible for robots to become our friends."

But will they look like us, as Ishiguro believes, and how comfortable will we feel surrounded by autonomous humanoids?

Japanese roboticist Masahiro Mori suggested in 1970 that the more robots resemble people, the creepier we find them—a phenomenon he

called the "uncanny valley".

Ishiguro's first attempt at creating an android clone was based on his daughter and its "jerky movements" reduced her to tears.

He has since perfected the template, including a creation he claimed was the world's first news-reading android and a robot priest at a Kyoto temple unveiled earlier this year.

Minato shares his boss's visionary ideas.

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"Hopefully remote-control technology will develop to allow our alter egos to lead regular lives," he said.

"Like in the movie 'Surrogates'— that would make life more convenient," he added, referencing the sci-fi Bruce Willis hit in which people cocooned at home experience lives through robotic avatars.

While he won't put a date on a real-life "Blade Runner" future, Ishiguro claims the rise of the machines has already begun.

"Already computers are more powerful than humans in some cases," he said. "Technology is just another means of evolution. We are changing the definition of what it is to be human."

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