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HOW CAN WE CONTROL WEAPONISED ROBOTS?

Yaxshiboyev Axrorbek
Teacher of Andijan State Institute of foreign languages
Abdullajonov Ahrorbek
Student of Andijan State Institute of foreign languages

Annotation: From armed robot dogs to target-seeking drones, the use of artificial intelligence in warfare presents ethical dilemmas that urgently need addressing.The security convoy turned on to Tehran's Imam Khomeini Boulevard at around 3:30pm on 27 November 2020. The VIP was the Iranian scientist Mohsen Fakhrizadeh, widely regarded as the head of Iran's secret nuclear weapons programme. He was driving his wife to their country property, flanked by bodyguards in other vehicles. They were close to home when the assassin struck.

Key words: convoy,turned on,nuclear weapons,property,flanked by,rang out,roboticmachine,software,ubiquitous,conflict,occupy,modify,harbour,grenades,robots, wreckage.

INTRODUCTION

A number of shots rang out, smashing into Fakhrizadeh's black Nissan and bringing it to a halt. The gun fired again, hitting the scientist in the shoulder and causing him to exit the vehicle. With Fakhrizadeh in the open, the assassin delivered the fatal shots, leaving Fakhrizadeh's wife uninjured in the passenger seat. Then something bizarre happened. A pickup truck parked on the side of the road exploded for no apparent reason. Sifting through the wreckage afterwards, Iranian security forces found the remains of a robotic machine gun, with multiple cameras and a computer-controlled mechanism to pull the trigger. Had Fakhrizadeh been killed by a robot? Subsequent reporting by theNew York Times revealed that the robot machine gun was not fully autonomou.

Body-language

Instead, an assassin some 1,000km away was fed images from the truck and decided when to pull the trigger. But AI software compensated for the target's movements in the 1.6 seconds it took for the images to be relayed via satellite from the truck to the assassin, and the signal to pull the trigger to come back. It's the stuff of nightmares, and footage from the war in Ukraine is doing nothing to allay fears. Drones are ubiquitous in the conflict, from the Turkish-made Bayraktar TB2 used to attack occupying Russian forces on Snake Island, to the seaborne drones that attacked Russian ships in Sevastopol harbour, and the modified quadcopters dropping grenades on unsuspecting infantry and other targets. And if footage on the internet is anything to go by, things could get worse. In one video posted on Weibo, a Chinese defence contractor appears to showcase a drone placing a robot dog on the ground. The robot springs to life. On its back is a machine gun. In another video, a commercially available robot dog appears to have been modified by a Russian individual to fire a gun, with the recoil lifting the robot on to its hind legs. In response to these alarming videos, in October Boston Dynamics and five other robotics companies issued an open letter stating: "We

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believe that adding weapons to robots that are remotely or autonomously operated, widely available to the public, and capable of navigating to previously inaccessible locations where people live and work, raises new risks of harm and serious ethical issues. Weaponised applications of these newly capable robots will also harm public trust in the technology in ways that damage the tremendous benefits they will bring to society".

In a statement to theObserver, the company further explained: "We've seen an increase in makeshift efforts by individuals attempting to weaponise commercially available robots, and this letter indicates that the broader advanced mobile robotics industry opposes weaponisation and is committed to avoiding it. We are hopeful the strength in our numbers will encourage policymakers to engage on this issue to help us promote the safe use of mobile robots and prohibit their misuse." However, Boston Dynamics is effectively owned by the Hyundai Motor Group, which in June 2021 bought a controlling interest in the company, and another part of that group, Hyundai Rotem, has no such qualms. In April this year, Hyundai Rotem announced a collaboration with another South Korean firm, Rainbow Robotics, to develop multi-legged defence robots. A promotional illustration shows a robot dog with a gun attached. He cites the example of an Apache helicopter scanning the landscape for heat signatures. The onboard software will quickly identify those as potential targets. It may even make a recommendation of how to prioritise those targets, and then present that information to the pilot to decide what to do next. If defence conventions are anything to go by, there is clearly an appetite in the military for more such systems, especially if they can be twinned with robots. US firm Ghost Robotics makes robot dogs, or quadrupedal robots as the industry calls them. As well as being touted as surveillance devices to help patrols reconnoitre potentially hostile areas, they are also being suggested as killing machines. At the Association of the United States Army's 2021 annual conference last October, Ghost Robotics showed off a quadrupedal with a gun strapped to the top. The gun is manufactured by another US company, Sword Defence Systems, and is called a Special Purpose Unmanned Rifle (Spur). On the Sword Defence Systems website, Spur is said to be "the future of unmanned weapon systems, and that future is now".

Conclusion

In addition, defence analyst and military historian Tim Ripley wonders what Boston Dynamic's commitment means in practice. Even if you do not strap weapons to these robots, he says, they can still be instruments of war. "If the robot is a surveillance drone, and it finds a target, and you fire an artillery shell at it, and it kills people, then that drone is just as much a part of a weapons system as having a missile on the drone. It's still a part of the kill chain," he says. He points out that drone surveillance has played a crucial role in the Ukraine war, used on both sides to track enemy movements and find targets for artillery bombardments.

References

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