

Dear Prime Minister,

We, the undersigned scientists and engineers, urge you to take action in support of an international treaty banning the development, deployment and use of lethal autonomous weapons systems. Such weapons locate, select and deploy lethal force against human targets without human intervention. Given rapid developments in the field, and ongoing research and development, the need for such a treaty is urgent. Without a treaty, we will be facing an arms race that will inevitably result in new types of weaponry that could cause large-scale injury and death, and that may be assembled by combining components and technologies that are accessible even to small groups. This presents a significant threat to UK and global security.

UN Special Rapporteur Christof Heyns, Human Rights Watch, the International Committee of the Red Cross and other experts have all expressed doubts concerning the ability of autonomous weapons to comply with laws of armed conflict regarding military necessity, proportionality, and discrimination between combatants and civilians. As a group that includes experts in many aspects of AI, we do not believe full compliance is feasible even for the current state of the art in machine vision and automated decision processes. Such judgements require considerable social context and situational awareness, well beyond the capabilities of systems for the foreseeable future.

There is also a basic moral question regarding whether autonomous weapons will be seen as fully compliant with the Geneva Conventions, whose Martens clause requires that “The human person remains under the protection of the principles of humanity and the dictates of public conscience.” We should ask, in advance, what public reaction will be to images of robotic weaponry killing unarmed children. Will this meet the dictates of public conscience?

However, we also believe that reliance on existing stipulations of international law is not sufficient to prevent development of these systems. Much of the technology could be developed and used under the auspices of defensive or non-lethal deployment, and then trivially repurposed for lethal offensive use. Moreover, whilst the legality of any deployment of lethal autonomous weaponry is in doubt, this may not be enough to dissuade countries that want to use the technology, since they can plausibly claim to have reached a different legal opinion. An unambiguous ban through international treaty would constitute a much more effective deterrent.

Strategically, the development of lethal autonomous weaponry will entail a considerable risk of tilting the global balance of power towards repressive regimes and small non-state groups. These regimes and groups rely on the recruitment and maintenance significant numbers of skilled and loyal people to perform violent atrocities on their behalf. These people must be convinced and bribed to act against inherent human repulsion for such acts. The availability of machines that can substitute for these humans will neutralise this disadvantage.

Repressive regimes and terrorist organisations could then cause immense harm without need for human combatants. Such groups do not have the technical capacity to develop the

technology for these weapons themselves. But if the algorithms and technologies are designed in the West, even under cover of secrecy, history suggests that these designs would not stay secret, and that the weaponry would quickly become available from unscrupulous dealers.

Prime Minister, your government has already announced that it does not plan to develop lethal autonomous weaponry. As the Defence Minister Lord Astor stated in a [House of Lords answer](#) on autonomous weapons in 2013, our Armed Forces have “no intention of developing systems that operate without human intervention.” We applaud the Minister’s declaration in that same exchange, “let us be absolutely clear that the operation of weapons systems will always—always—be under human control”.

We, the undersigned researchers and engineers, upon some of whom’s work this weaponry would be based, strongly advocate building upon this statement of intent by Her Majesty’s Government by giving official support for an international treaty that outlaws this weaponry. We believe that a strong and binding statement, enshrined in international law, is our country’s and our world’s best hope for averting the harmful consequences that will arise from the development and use of lethal autonomous weapons systems.