How America Needs to Safeguard Its Nuclear Weapons from Artificial Intelligence

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How America Needs to Safeguard its nuclear weapons from Artificial Intelligence

Many believe that nuclear weapons are a relic of the Cold War, however tensions between America and other near peer adversaries have brought nuclear weapons back to the forefront of deterrence in the 21st century. However, unlike the Cold War, artificial intelligence has complicated the ways in which nuclear weapons have been used to deter escalating tensions and outright warfare. In America, the president has sole launch authority. This means that the decision to use nuclear weapons, and how so, rests entirely with president. Advisors, such as the Secretary of State, the Chairman of the Joint Chiefs of Staff, and the Vice President can provide input regarding policy. However, the short duration of time between when a nuclear weapon is launched and when it impacts may necessitate a quick and decisive decision from the president alone without time to consult with his top advisors. The drive for military supremacy among the US, China, and Russia has developed into a race to implement artificial intelligence into the military decision making process, as these nations, among others, seek to take advantage of AIs quick decision making, ability to process massive amounts of data quickly, and ability to provide advanced offensive and defensive cyber capabilities. However, the drawbacks of implementing AI into the nuclear weapons decision-making process can be catastrophic. AI may hallucinate, be tampered with by hostile actors, and lacks an established set of norms and procedures at the national level to guide governance. Due to the seemingly inevitable crossing of the AI threshold, Americas nuclear weapons need to be safeguarded from AI. Ensuring correct information is presented to top officials, ensuring that America's network of nuclear missile detection systems is secure, and the establishment of norms and procedures to prevent malicious AI use must be institutionalized to prevent disaster.

In America, the president has the sole decision to launch nuclear weapons. This decision also extends to how many warheads to use and what to target. Nuclear weapons can be launched from three different delivery platforms: submarines hidden in oceans around the world, stationary land-based silos, and by stealth and non-stealth aircraft. If the president chooses to employ nuclear weapons, there are a variety of options to consider, such as the delivery platform, yield size, number of warheads, and number and location of targets. While the launch authority of Chinese and Russian nuclear weapons is more opaque, their delivery platforms and number of nuclear warheads could destroy America within hours. In the never-ending race to maintain global military hegemony, America continually seeks to outmatch its near peer adversaries, mainly China and Russia, in all aspects of military domain, including AI. AI will provide an immense military advantage, due to its ability to process massive amounts of data and make decisions faster than any human, but its drawbacks will greatly impact nuclear weapons policy. Due to the few minutes it takes to launch a nuclear weapon or react to a nuclear strike, the speed and processing power of AI may be too appealing to reject by either the Chinese, Russians, or American military commands responsible for their use. A treaty to reject AI is also unlikely due to a lack of trust and difficulty in regulating AI. This ensures that AI will find its way into strategic military capabilities. However, there are steps America can take to mitigate the threats posed by AI as the 21st century presents unique challenges to global order.

The president and his top advisors need to be insulated from misinformation or disinformation that is easily created by AI. Misinformation is falsely created media, either pictures, videos, or other forms of communication.[1] Disinformation is misleading media, that may have some original truth behind

[1] *American Psychological Association*, American Psychological Association, www.apa.org/topics/journalism-facts/misinformation-disinformation

it, that is spread intentionally.[2] Either way, the prevalence of this malicious spread of information can easily reach the president and his or her top advisors. This can be done by major news networks or carefully curated through a massive social media influence operation. In the past, leading government officials have fallen victim to this kind of influence, making statements or policies based on something that never happened. During the 2022 reinvasion of Ukraine, a deepfake video of President Zelensky announcing a general surrender to Russia appeared on social media in an attempt to trick Ukrainians soldiers on the frontlines into surrendering to invading Russians.[3] While this deepfake was easily determined to be fake, the rapid advances of AI could make such videos more realistic and with greater consequences. This video was taken down quickly by social media curators, but the lack of time needed to make the decision to use nuclear weapons, and how so, could be made before moderators react. Content such as this, created by a kind of AI known as generative AI, could unduly influence the president, and maybe quicker than the president and his top advisors could make the correct decision. To address this challenge, policy must be adjusted to involve top officials into the decision-making process. While there may not be enough time to assemble top advisors, efforts must be made to quickly identify misinformation and disinformation from malicious actors and keep this false reporting from reaching people of influence in the US government. This would entail efforts from social media companies, the established press, and those who collect, analyze, and prepare information that reaches the sole authority to use nuclear weapons in America, the president.

America relies on a global network of ground based and space-based sensors to detect a sea or land based nuclear missile launch.[4] These sensors transmit the location of the launch and track the missile to determine its possible target. However, AI enabled hacking, jamming, or spoofing can complicate the decision-making process. In early November, both the UK and Germany reported that their military satellites have been jammed and interfered with by Russia as part of Moscow's campaign to intimidate and harass NATO nations and spy on communications.[5] This can lead the president to determine that a launch is happening when it is not, stop sensors from communicating when a launch is not occurring, or falsely project that a nonnuclear missile launch is a potential nuclear strike against America. American command, control, and communication produces are highly protected, but emerging AI cyber threats may overcome these defenses, especially if these defenses are not using AI themselves. Therefore, America must invest in its strategic communication systems to ensure that its most critical sensors are immune from AI threats, a challenge made even more difficult by the unforeseeable capabilities of AI enabled offensive cyber weapons.

In order to best implement these policy changes, an establishment of norms and best practice procedures must become a part of US military and government training. This will best help leaders identify AI from its uses in the media to its uses in foreign militaries. These leaders must also be aware of AI's emerging role in escalation ladders. By being able to identify AI, military and government leaders will be able to better react to strategic messaging, communication, and motivations posed by adversaries. The speed at which AI makes decisions is enticing to all militaries, especially those seeking to deter nuclear escalations. Misinterpretation of AI enabled strategic messaging could lead to unintended and

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[2] *American Psychological Association*, American Psychological Association, www.apa.org/topics/journalism-facts/misinformation-disinformation
[3] Wakefield, Jane. "Deepfake Presidents Used in Russia-Ukraine War." *BBC News*, BBC, 18 Mar. 2022, www.bbc.co.uk/news/technology-60780142
[4] "Defense Support Program Satellites." *United States Space Force*, www.spaceforce.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2197774/defense-support-program-satellites/
[5] Kent, Lauren. "UK and Germany Have Accused Russia of Threatening Their Satellites. Here's What That Means." *CNN*, Cable News Network, 9 Nov. 2025, edition.cnn.com/2025/11/09/europe/russian-satellite-spying-explainer-intl

uncontrollable escalation and a lack of offramps. [98] A lack of an established escalation ladder involving AI and nuclear weapons among the US, China, and Russia, creates ample room for mistakes and unintended consequences. America needs to implement AI awareness and handling training into senior level government and military positions to address this threat.

The emergence of AI is driven by real and perceived competition between the US, China, and Russia. All three nations maintain the largest nuclear arsenals in the world, with secure second-strike capabilities and reliable means of delivery. While AI does offer a massive military benefit, its use must be carefully regulated by each nation in the absence of binding international treaties. The American president must be properly insulated from the negative effects of AI driven media as this can cloud judgement. Ensuring correct and accurate information is delivered to the President and his top advisors could avert a nuclear war. Improving the secure nuclear command and control, especially the means of communication that are transmitted wirelessly, needs to be protected to prevent compromise. False or misleading data could start a nuclear war that would not have occurred otherwise. Finally, the establishment of norms and procedures in training for high level military and government officials can better manage escalating tensions and hopefully diffuse sources of friction. AI will make decisions much more rapidly than any human, but these decisions may not be in the best interest of any nation. The intersection of AI and nuclear weapons will create numerous challenges for humanity, and the US must safeguard its nuclear arsenal from these threats before catastrophe occurs.

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