**第十二届“板桥杯”（Bambridge）青年翻译竞赛笔译原文**

**AI Applications at the Strategic Level of War**

    Like so many technologies, AI is loaded with latent military potential. How long will it be until we see game-changing AI applications in this field? Algorithmic warfare is potentially a prime mover of a revolution in military affairs. AI was central to the “third offset strategy” pursued by the Department of Defense in the second Obama term and was a principal focus of multiple government initiatives to accelerate the development of advanced technologies. In June 2018, DOD set up its Joint Artificial Intelligence Center, following the establishment of the White House’s Select Committee on AI in May 2018 and the release of the White House Executive Order on Maintaining American Leadership in Artificial Intelligence on February 11, 2019. DOD and IC spending on AI has also increased. For military applications with direct analogs in the civilian world, like logistics, planning, analysis, and transportation, AI-supported data analytics are already in use throughout the defense and intelligence communities. These applications are separate and distinct from applications to warfighting, which tend to fall into two categories: those with effects primarily at the operational level of war and those that also affect the strategic level. AI applications at the operational level of war could have a very significant impact on the use of general-purpose military forces to achieve tactical objectives, and thus on the credibility of conventional deterrence. AI applications at the strategic level could have significant influence on political decisions about the scale and scope of war, escalation and de-escalation, and, by extension, strategic stability and deterrence.

**A System of Systems Enabling Exquisite ISR**: For the military, object identification is a natural starting point for AI, as it requires culling images and information collected from satellites and drones to find things of military importance, such as missiles, troops, and other relevant intelligence information. The National Geospatial Intelligence Agency (NGA) has led the charge in applying AI to military and intelligence needs. But object identification is just the beginning. Intelligence, surveillance, and reconnaissance (ISR) is the key to multidomain situational awareness. This holistic awareness is increasingly critical as the battlefield extends to all domains—sea, land, air, space, and cyber—on a global scale.

    Managing and making sense of the staggering amount of ISR data involved in modern warfare is a natural fit for AI—and the objective of DOD’s Project Maven, also known as the Algorithmic Warfare Cross-Functional Team. According to Lt. General Jack Shanahan, the director of Defense Intelligence for Warfighter Support, Project Maven was conceived as “the spark that kindles the flame front for artificial intelligence across the rest of the department.”

    Maven’s initial mission was to help locate ISIS fighters. Its implications, however, are vast. Multidomain warfare involves colossal amounts of heterogenous data streams that can be exploited only with the help of AI. Mirroring the proliferation of sensors in the civilian world, the multidomain, hybrid-warfare battlefield has become a military version of the internet of things, teeming with vital information for assessing tactical and strategic threats and opportunities. While the ability to manage this data colossus in real time promises tremendous advantages, failure to draw meaning from that information could spell disaster.

    The ability to rapidly process a flood of information from various platforms operating in multiple domains translates into two fundamental military advantages: speed and range. Moving faster than your adversary enhances offensive mobility and makes you harder to hit. Striking from farther off adds the element of surprise and minimizes exposure to enemy fire. These were central tenets of the previous revolution inmilitary affairs that debuted in the Gulf War. AI makes it possible to analyze dynamic battlefield conditions in real time and strike quickly and optimally while minimizing risks to one’s own forces. As a recent Defense Science Boardstudy demonstrated, such integrated battle-management, command, control, communications, and intelligence (BMC3I) capabilities are well suited to finding and targeting deployed missile batteries. They may thus be the key to countering critical elements of the anti-access area denial (A2AD) strategies of Russia and China, which were designed to exploit the vulnerabilities of U.S. land and sea assets in Europe and Asia. In addition to geolocating targets, AI-enabled BMC3I could help guide and coordinate kinetic effects involving multiple platforms, possibly providing a counter to current adversarial A2AD. From this perspective, the cumulative effects of tactical level AI could become a strategic-level game changer.

**Precision Targeting of Strategic Assets:** AI-empowered ISR that makes it possible to locate, track, and target a variety of enemy weapons systems raises the possibility of striking strategic assets, such as aircraft carriers, mobile missiles, or nuclear weapons. This capability, and perceptions about its existence, could disrupt longheld assumptions about deterrence stability, especially if it appeared possible to conduct a disarming counter force strike against an adversary’s retaliatory forces. Offensive weapons that can “find, fix, and finish” a significant portion of an adversary’s strategic assets, combined with defensive systems that can shoot down remaining retaliatory capabilities, could challenge fundamental precepts of deterrence based on mutual vulnerability. Effective Missile Defense: Advances in AI-enhanced targeting and navigation have improved prospects for a wide range of tactical and strategic defense systems, especially ballistic-missile defenses, by empowering target acquisition, tracking, and discrimination. The convergence of powerful new offensive and defensive capabilities has rekindled fears, however, of a surprise attack that could rattle strategic stability.

**AI Guided Cyber:**As an inherently digital domain, the cyber realm naturally lends itself to AI applications, as illustrated by the centrality of AI algorithms in the code of social-media titans like Google and Facebook. The availability of enormous amounts of data in electronic formats is well suited to AI strengths. AI-guided probing, mapping, and hacking of computer networks can provide useful data for machine learning, including discovery of network vulnerabilities, identities, profiles, relationships, and other information that may be valuable for offensive and defense purposes. Chinese applications of AI for societal surveillance purposes arouse broad concerns about the implications for privacy and democracy, while Russian influence operations have demonstrated the vulnerability of social-media platforms to manipulation. On the offensive side, AI could locate and target particular nodes or individual accounts for collection, disruption, or disinformation. Cyberattacks on national command infrastructure and networks, for example, could be catastrophic. On the defensive side of the equation, AI can help detect such intrusions and search for debilitating anomalies incivilian and military operating systems. AI will equally empower offensive and defensive measures, with both positive and negative strategic effects. In sum, AI has great potential application in the military domain, at both the operational and strategic levels of war, and may enable significant new operational and strategic advantages as the United States and others exploit these technologies.