



## **Key Findings**

### **United States-Singapore Cyber & Tech Security Virtual Series Session #6**

#### **Toward Shared Ethical Standards in AI: American and Singaporean Perspectives**

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On June 15, 2021, with the support from the US Embassy Singapore, the Pacific Forum hosted the “Toward Shared Ethical Standards in AI: American and Singaporean Perspectives,” with 53 participants from government, private sector, academia, and other non-governmental organizations. The virtual dialogue was the sixth and the final session of the *United States-Singapore Cyber&Tech Security Virtual Series*.

Dr. Jaclyn Kerr, Senior Research Fellow for Defense and Technology Futures, Institute for National Strategic Studies, National Defense University; Professor Simon Chesterman, Dean, National University of Singapore Law and Senior Director of AI Governance, AI Singapore; and Teo Yi-Ling, Senior Fellow at the S. Rajaratnam School of International Studies, shared different yet complementary perspectives on how the US and Singapore are shaping Artificial Intelligence (AI) from a human-centric lens through the advancement of ethical principles in their bilateral and multilateral collaboration.

Key findings from this virtual dialogue are described below.

#### **Understanding AI and Ethics**

As a dual-use technology, AI is a force multiplier in the development of industry, society, government, and military. With the advent of 5G and the Internet of Things, dependence on AI will boom in the years ahead. Thus, a frank and comprehensive examination of the risks and rewards of AI’s use cases and applications is needed.

Like other transformative technologies in human history, the disruptive effects of AI have become a source of anxiety. Critical issues attached to AI include human labor displacement, biased algorithms, surveillance, manipulation, and weaponization. From a legal perspective, AI currently presents three unique challenges. First is the ability of current laws to keep pace with rapid innovations in AI. The second is one of autonomy, which pertains to liability. As in the case of a malfunctioning self-driving car crash, who do we hold responsible? Finally, the third challenge is the opacity of the inner workings of AI or Machine Learning algorithms.

These challenges surrounding AI have brought to light the urgency of adopting ethical principles such as safety, accountability, non-discrimination, privacy, human control, and transparency. These principles are notable in advocating for the responsible use of AI.

With the exemption of human control, which requires novel ways of thinking about human centrality; and “explainability” that demands transparency and accountability, closer scrutiny shows that the proposed ethical principles tend to overlap with existing laws. For instance, safety can be covered by product liability; accountability by civil and criminal law; non-discrimination by human rights; and privacy by data protection.

The regulation of AI poses another challenge. While regulation can address market failures, there is a danger of stifling innovation due to over-regulation. With AI’s current geopolitical and geoeconomic climate driven by US-China competition and the European Union’s regulatory frameworks on technology, striking a balance between regulation and innovation has proven challenging.

### **Examining American and Singaporean Perspectives on AI**

Over the last 55 years, the US-Singapore relationship has flourished amid the ebb and flow of geopolitical challenges in Southeast Asia, culminating in a strategic partnership in 2012. Although not equivalent to perfect strategic alignment, the strategic partnership has facilitated deeper cooperation between the two countries on a range of activities from counterterrorism, naval operations, and counterproliferation to emerging security challenges posed by technological disruptions like AI. Since 2019, the United States has been working closely on bilateral AI cooperation with Singapore given its vital role as a regional partner. With its access to U.S. advanced military technologies, Singapore acts as an innovation broker in broader Southeast Asia. Given the growing centrality of AI in their strategic partnership, the United States and Singapore are grappling with the task of developing AI that truly enhances human existence.

Early on, Singapore set its sights on using AI to build its trusted digital ecosystem. To achieve a balanced approach in managing the push-and-pull factors of AI regulation and innovation, Singapore released its *Model AI Governance Framework* or simply referred to as the “Model Framework.” It outlines four key pillars to promote better trust and understanding toward AI: (1) Internal Governance Structures and Measures; (2) Determining the level of Human Involvement in AI-augmented decision making; (3) Operations Management and (4) Stakeholder Interaction and Communication. This framework provides baseline considerations for the private sector and does not discriminate based on an organization’s scale.

Through its *American AI Initiative* released in 2019, the U.S. government has adopted a whole-of-government approach guided by five principles: (1) Driving technological breakthroughs; (2) Development of appropriate technical standards; (3) Training workers with the skills to develop and apply AI technologies; (4) Protecting American values, including civil liberties

and privacy, and fostering public trust and confidence in AI technologies; and (5) Protecting the U.S. technological advantage in AI while promoting an international environment that supports innovation.

The U.S. government has taken proactive steps toward mitigating the dangers associated with the rising importance of AI and data in national security and economic policies. The State Department, National Security Council, and Department of Defense have begun formulating ethical AI principles specifically for AI in military applications. Through the Joint-Artificial Intelligence Committee, the Department of Defense has established the five guiding AI Ethical Principles—responsible use, equitable use, traceability, reliability, and governability—under its own AI Strategy. The adoption of AI ethical principles serves as the foundation for DOD in the design, development, deployment, and use of AI-enabled military capabilities.

The United States and Singapore have made modest strides to promote the responsible use of AI within and beyond their bilateral cooperation. The United States and Singapore’s AI collaboration is founded on a shared set of values and principles and a mutual recognition of each other’s strengths and responsibilities under the matrix of their strategic partnership. Together with the United States, Singapore is one of the founding members of the Global Partnership on AI that promotes a multi-stakeholder and human-centric development of AI consistent with human rights under the auspices of the Organization for Economic Cooperation and Development.

Efforts are underway to establish a global set of AI principles, with their adoption among nation-states entirely voluntary. AI is unlike other industries such as media, where competitors agree to be governed by ethical standards. Convincing relevant actors to submit themselves to sets of governing AI ethics could weaken the current momentum driving AI innovation.

### **Moving forward: Lessons from Nuclear Nonproliferation**

AI presents many clear and present dangers to society. With its imminent weaponization and capacity to manipulate information or poison data, AI’s negative impact on the military and civilian sectors is not far from reality. While the transnational nature of AI creates thorny issues, this is far from the first time the world has faced the complexity of such a dual-use technology. The field of nonproliferation can provide invaluable frameworks through which international cooperation on AI can prosper. The optimism that came out of World War II in terms of peaceful uses of nuclear technology paved the way in ameliorating the problematic concerns over its weaponization.

Thus, the International Atomic Energy Agency (IAEA) launched a campaign for a grand bargain focused on the peaceful transfer of nuclear technology. Despite being mortal enemies at that time, the United States and the Soviet Union found common ground to cooperate on nuclear issues through the IAEA.

Much like nuclear weapons, AI is a force multiplier and can empower small states that lack conventional military power. There is no silver bullet to preventing bad actors from taking AI into their own hands. Keeping the conversation open and bringing as many collaborators on board as possible creates a more cooperative context. The focus should be on carrots rather than sticks. In the end, most ethical principles can be distilled to self-restraint. Unlike chemical, biological, or nuclear weapons, the barriers to entry into AI are significantly lower. Adopting self-regulation in both the military and private sector would be a critical step in the right direction, at least in the short-to-medium term. Over the long haul, states should establish clear rules and ethical principles to truly reap the equitable benefits of AI.

*This document was prepared by Mark Manantan and Daniel Mitchum. For more information, please contact Dr. Crystal Pryor ([crystal@pacforum.org](mailto:crystal@pacforum.org)), Director of Nonproliferation, Technology, and Fellowships at Pacific Forum. These preliminary findings provide a general summary of the discussion. This is not a consensus document. The views expressed are those of the speakers and do not necessarily reflect the views of all participants. The speakers have approved this summation of their presentation.*