



CAAI = Center for Autonomy and Artificial Intelligence

What is AI?

A panel discussion on the opportunities and challenges presented by artificial intelligence

Tuesday, January 22, 2019 | 1:30 pm- 3:00 pm

Artificial Intelligence is increasingly powering many aspects of our everyday lives. The past few years have seen dramatic advances in which machines complete complex tasks and match or exceed human performance. In the opinion of CNA's Andy Ilachinski, "AI will have a greater impact on human culture in our lifetime—certainly in our children's lifetime—than anything in our history." The opportunities this technology offers have caught the attention of countries seeking a military advantage. AI is expected to have a revolutionary impact on military operations, on par with the invention of gunpowder and nuclear weapons. China, Russia and the US are all making AI a pillar of their national security efforts.

Despite the tremendous importance and impact of AI, decisions and deliberations regarding the technology can be muddled by an unclear understanding of what AI really is—and is not. A lack of AI literacy can lead to misunderstandings of its risks and fuel uninformed decisions regarding national security applications. CNA experts Andy Ilachinski and David Broyles aim to "unmuddy" the waters of AI, giving a history and overview of the technology, outlining recent developments and research, and pointing the ways forward in effective use of AI given the current state of the art. Join us at CNA for this discussion followed by a question and answer period. David and Andy co-host CNA's popular podcast AI with AI, which is available on all major podcast platforms.



David Broyles is a Research Team Leader at CNA who specializes in cyber operations and special operations, as well as experimentation and innovation in the Department of Defense. He has a background in naval mine warfare, improvised explosive devices (IEDs), the Littoral Combat Ship, the Defense Readiness Reporting System for the U.S. Navy, operations assessment and Marine Corps operations in Afghanistan.

Broyles has served as the CNA Field Representative to the Navy Expeditionary Combat Command, analyzing global resourcing, and to the United States Fleet Forces Command. He assisted operations in Baghdad, Iraq, where he analyzed electronic warfare for the Navy and Army.

Broyles has a PhD in Chemistry from Cornell University and a bachelor's degree in Chemistry from Washington University in St. Louis.



Andy Ilachinski specializes in the mathematical and computer modeling of complex adaptive systems. He pioneered the application of agent-based modeling (ABM), and evolutionary programming techniques to military operations research problems, and developed two of the earliest ABMs of land warfare.

Ilachinski has authored two graduate-level mathematical physics textbooks (Cellular Automata and Artificial War, by World Scientific), contributed chapters to others (including Springer-Verlag's prestigious 11-volume Encyclopedia of Complexity and Systems Science and two editions of a textbook on artificial life), and briefed the distinguished JASON Defense Advisory Panel on complexity science.

Ilachinski has a Ph.D. in Physics and B.S. degrees in Mathematics and Physics (all from the State University of NY, Stony Brook), and serves on the editorial board of two international journals (Journal of Cellular Automata and the International Journal of General Systems).

"We propose that a 2 month, 10 man study of artificial intelligence be carried out during the summer of 1956 at Dartmouth College in Hanover, New Hampshire.

The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it. An attempt will be made to find how to make machines use language, form abstractions, and concepts, solve kinds of problems now reserved for humans, and improve themselves."

— Dartmouth AI Project Proposal, John McCarthy, 1955

