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## **Human-Machine Communication for Enhanced Decision Making**

Advances are being made in the areas of artificial intelligence (AI) and machine learning (ML) for analyzing large amounts of data. Even with these significant improvements in data sciences, AI methodologies still fall short of making meaning and understanding from novel data to enable robust decision making. The ability of humans to use insight from past experiences to solve original problems far exceeds that of current AI and ML techniques. However, their capacity to process data has remained constant over the years. Human decision making is limited by three primary factors: available Information, cognitive processing power and time. Fully exploiting available information to improve decision quality of cyber operators will require the merger of the computational power of machines and the meaning-making ability of humans to work as a joint system. One challenge that must be addressed for realizing this synergistic relationship is the transmission of information between humans and machines. Since machines and humans represent knowledge differently, communication between these entities will require the appropriate transformation of data from the sender to the receiver for preserving the integrity and intent of the information. This presentation will discuss emerging technologies and tools to enhance decision making for cyber operators.