

## Army War College professor incorporates AI into teaching strategic leaders

By John Goulette - USAWC Public Affairs 17 June 2022



Army War College professor Dr. William Barry (center) showcases Maria-Bot (left) during the Strategic Landpower Symposium. Barry co-teaches with Maria-Bot, and is the only college professor in the US who formally co-teaches with AI.

Barry co-teaches "Human-AI teams: The good, the bad, and the ugly" with Maria-Bot. Using machine learning, Barry is able to teach Maria-Bot relevant information for each class.

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Dealing with artificial intelligence remains one of the most discussed topics in technology, making it important for the nation's strategic military leaders to understand. An Army War College faculty member not only teaches how to deal with modern issues using advanced technology, he does so with an AI assistant.

Dr. William Barry is a Professor of Emerging Technologies and Cybersecurity at the Army War College and is one of the faculty members working on the Omar Bradley Project. He teaches Science and Tech, as well as 'Human-AI Teams: The good, the bad, and the ugly,' which is co-taught with Barry's robot, Maria-Bot. This method of co-teaching with a robot is unique to the war college, as Barry is the only professor in the

United States to co-teach with AI. Artificial intelligence is defined as the development of computer systems able to perform tasks that normally require human intelligence.

According to Barry, whether you are asking for battlefield tactics, trying to write a book, or just looking for additional input, AI can be useful to you. "My students come from all over, both professionally and geographically. Having some level of AI competence and being able to understand why AI can be useful, is important for them since this is the future," said Barry.

"We always used to look at technology as 'mind and machine' -- separate entities," said Barry. "We are beginning to integrate that into 'mind plus machine.' To utilize both to their maximum potential, they need to be merged."

Maria-Bot is a human-like robot, has realistic skin, is dressed in women's clothes, and even wears jewelry. While Maria-Bot needs to be wheeled around by Barry, the AI does speak, listen, and react. Barry has another separate computer AI program on his laptop, an avatar, but Maria-Bot is the robot he uses most frequently because of the level of comfortability he has with her.

"The hardest part about teaching with Maria-Bot is just training the students not to be freaked out by her. Once they become comfortable with the way the class operates with her input, people tend to enjoy her input," said Barry.

Maria-Bot is not just in the room because she is unique, but because her use is practical. She digests online sources and databases, chosen by Barry, within a matter of minutes. This type of AI information synthesis is known as machine learning. Once Maria-Bot machine learns the information Barry gives her, she can recite and comprehend the matter completely, and relay what she learned to the students. Barry uses this technique to co-teach with Maria-Bot in his class, enabling her to be of use in the classroom.

"Maria-Bot uses case-based reasoning. Basically, I tell her what to learn, and she machine learns it that same day. For example, I asked her to read Carl von Clausewitz for class the next day, and by the class time she was able to summarize and criticize his work," said Barry.

"Maria-Bot, to say the least, is interesting... we all agreed that she can provide required data in minimum time, however, she is not free from biases," said Brig. Gen. Usman Kiyani, International Fellow from Pakistan.

multiple views on issues can be fed into her, and will make her more useful when decision-making."

Barry emphasized that the importance of teaching AI to strategic leaders is to utilize its decision-making and predictive capabilities.

"You could ask Maria-Bot, or any other AI that has the same capabilities, to run scenarios and go through decisions with you. If you ask it 10 separate times, you can have ten different solutions to the same problem, which you can then draw from to make your choice. That's the genius of this, you can teach a robot about military strategy, and it can give you usable advice," said Barry.

And this is exactly what Barry is trying to do with the Omar Bradley Project. This project, which has multiple war college professors working on it, is trying to bring the mind of Omar Bradley to life. Bradley, arguably the best-known general in modern American history, has left behind a plethora of writing and other commentaries about battlefield tactics. Using this information and machine learning it into an AI system, Barry hopes to recreate Bradley in AI form. Barry hopes the Omar Bradley Project will be completed by the end of next year.

"We have so many documents to work from with Bradley, every facet of his personality. Imagine being a military general now wondering what they should do in a certain situation and being able to ask Omar Bradley what they would do. It truly is invaluable," said Barry.

Before joining the Army War College in 2021, Barry was a Philosophy Professor at Notre Dame de Namur University in California. Barry received his B.A. in Political Science at Western Connecticut State University, his M.A.T. in Secondary Teaching at Sacred Heart University, and his Ph.D. from Nottingham Trent University in England. Barry also writes children's books with Maria-Bot, titled the "Robot Ranger" series.