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Letter from Editor: Artificial Intelligence Applications, Do Army Need It?

Article · March 2014

DOI: 10.17858/jmisci.38152

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Editorial

Artificial Intelligence Applications; Do Army Need It?

We are delighted to present second issue for this year. Although we have recently commenced publishing, we have already been indexed in several places. We have received quite number of positive feedbacks about JMIS also.

In this issue, two topics are reviewed. In the first article, Capt. Dikici has presented a project paper about the compliance of the Mine-Resistant Ambush-Protected (MRAP) vehicle program of the US Department of Defense (DoD). He claims MRAP program showed successful examples in reform objectives.

In the second article, Bali and Eroglu have presented a research paper about hazardous materials (hazmat) production and transportation. Aim of their study is to propose an assessment multi criteria decision making (MCDM) model for the selection of 3PL provider for hazmat. They used both Fuzzy DEMATEL and Fuzzy TOPSIS approach for this study.

I desire to commence a discussion in this letter. As editor, I specifically believe that we need to pay attention to a point. Artificial intelligence (AI). So what is AI? I give some definitions of AI below.

- "The study of mental faculties through the use of computational models" (Charniak and McDermott, 1985).
- "The study of the computations that make it possible to perceive, reason, and act" (Winston, 1992).
- "The art of creating machines that perform functions requiring intelligence when performed by people" (Kurzweil, 1990).

- "The study of how to make computers do things at which, at the moment, people are better" (Rich and Knight, 1991).
- "A field of study that seeks to explain and emulate intelligent behavior in terms of computational processes" (Schalkoff, 1990)
- "The branch of computer science that is concerned with the automation of intelligent behavior" (Luger and Stubblefield, 1993)

Definitions give some clue about future expectations from computer science and AI. I personally think AI has a primary goal: intelligent machines clever than human being.

One of main goal of artificial intelligence is to understand intelligent entities. Philosophy and psychology science are also concerned with intelligence, but AI try to establish intelligent entities as well as understand them. Another reason to study AI is that these constructed intelligent entities are interesting and useful in their own right (Russell and Norvig, 1995). I believe that describing future life is not possible from today. Scientific proceeding shows us that computers with human-level intelligence will have deep effect on our daily lives and on the civilization future.

Artificial intelligence studies all over the world continue to attract considerable interest. When we look at Figure 1, we can see wide variety of AI usage. Here, I can ask my question. Do army need AI approach or AI applications?

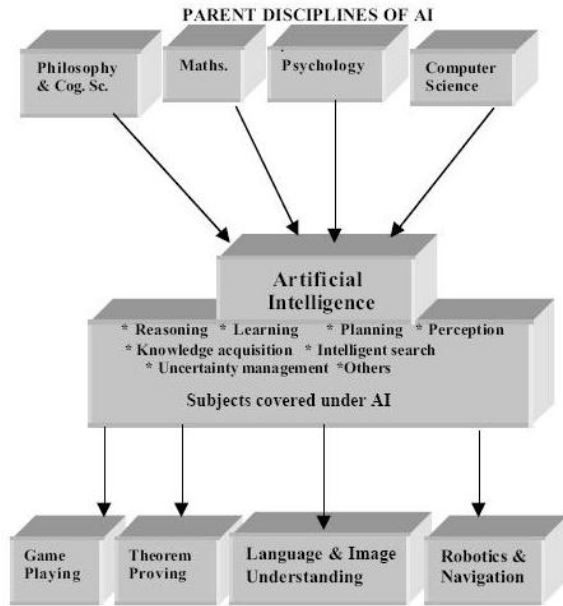


Fig 1. Application areas of artificial intelligence
(<http://www.learnartificialneuralnetworks.com/ai.html>)

In battlefield, a variety of “combat functions” help commander build and sustain combat power. Operational level commanders should integrate and coordinate these functions in order to synchronize battle effects in time, space, and purpose. Combat functions are as seen below (Army, FM 100-5, 1993);

- Intelligence.
- Maneuver.
- Fire support.
- Air defense.
- Mobility and survivability.
- Logistics.
- Battle command.

It is a fact that commanders should examine every level of combat in order to synchronize forces and effects on the battlefield.

When you examine combat functions closely, I can give my answer. Yes, Army absolutely need AI and its applications. “*Operations Maintenance, Intelligence Training, Logistics, Intelligence Processing, Force Allocation, Intelligence Analysis and Situation Assessment, Route Planning and Navigation, Battle Tactics,*

Communications, Targeting, Decision Making, Operation Planning, Casualty Forecasting, Logistic Support, Human Resource Management, War Gaming, GPS and Image Processing” are some topics that need AI support. I think only the definition of artificial intelligence is a broad topic that cannot be explained in a letter. I advise our readers to make detailed search for Army AI application areas if they are interested in this research area.

Sincerely,

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Journal of Military and Information Science

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