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Business Analytics Institute

Newsletter #1 – March 2022 –

– Special Ukraine – AI at war –

In this week's Muse newsletter, we explore the extent to which artificial intelligence pretexts a third revolution in modern warfare. A global test case for the wartime use of AI has been seeded deep in the drama and pain of the current Ukrainian conflict.

The direct protagonists, as well as those that have remained on the sidelines, are leveraging AI in hopes of decisively turning the tide.

As the days of conflict turn into months, we uncover ample proof of the need to take the time to assess the role, the impact, and the limits of AI in supporting human decision-making.

There are multiple takeaways in the various contributions below. Slaughterbots, Turkish drones, anomaly detection software, Russian troll farms, and deep fakes are just some of the applications that are being tested and refined on the battlefield.

Yet, in spite of the diversity of these examples, we can ask why AI hasn't been used even more extensively in the present crisis.

In which conditions can AI work with humanity, and to what degree, if any, AI for war can be considered ethical?

In this first edition of our newsletter, we choose to address the difficult challenges of the here and now, and to nudge our audience to focus on things that matter.

Don't hesitate to leave us a comment, to share our newsletter.

Enjoy reading!

- **War machines: Can AI for war be ethical? – Cove Army.gov**

In an article for The Cove, Aaron Wright explores whether AI for war can by definition be ethical. Modern day battlefields are becoming increasingly proliferated with artificial combatants, the US Department of Defense (DoD) on 24 Feb 20 announced a number of ethical guidelines (US Dept of Defense, 2020) to help assure the public that as they continue to develop AI for battlefield use, it would be designed and deployed in an ethical manner.

Deontology and its followers are mostly concerned about following the '**moral law**'. Most widely recognised in the form developed by Immanuel Kant in the late 18th century (Burton et al., 2017).

Utilitarianists are the **opposite side of the coin to Deontologists**, ultimately considering the consequences of actions, more than the ethics of the action itself. They are concerned with creating the greatest balance of good over evil (Frankena, 1963).

Virtue as a framework for ethics differs from considerations of 'duty' or calculations of consequence by its focus on good character (Neubert & Montanez, 2020).

Where Utilitarianists will define virtue as an action that yields good consequences and deontologists as the fulfilment of duty or a moral code, virtue ethicists will resist the attempt to define virtues in terms of some other concept, rather asserting that virtuous behaviour stems from undefinable, innate characteristics of human consciousness (Stanford University of Philosophy, 2016).

Contract theory, popularized by Thomas Hobbes postulates that no person is naturally so strong they could be free from fear of another person, and no one so weak they could not present a threat. Thus, it is logical to form networks of mutual obligations for ongoing survival.

An example being how we surrender some freedoms to the 'state', which enforces rules to guarantee and protect every person's rights in return (Ethics Centre, 2016).

These mutual agreements between individuals and collectives as to what is proper is known as the social contract.

- **AI goes to war in Ukraine – Fortune**

Battlefield 4.0. The war in Ukraine is unfortunately not the first war of the 21st century.
But what makes it different from other wars is that it is the first war to use artificial intelligence-based weapons (drones) and data mining.

The use of artificial intelligence allows the analysis of data from social networks and open source government data that is available to the parties.

On the information side, AI capabilities also make it possible to verify the information that comes to us because some of it is AI-generated deep fakes.

Hopefully, AI experts will become aware of the power of AI on the battlefield.

- **AI and disinformation in the Russia-Ukraine war – TechTarget**

In a traditional war, the theatre of operations may be in the air, on land or at sea on a specific area, depending on the conflict zone. And the aggressor can send propaganda images to the inhabitants of the attacked country.

The Russian-Ukrainian war has added a new combat zone, the social networks. Here, there are no lethal weapons but the use of a new weapon in binary form, the algorithm and more precisely machine learning.
Machine learning makes it possible to create deepfakes as well as to generate disinformation.

There are two types of machine learning: Transformer networks and Generative adversial.

- **Beyond Ukraine: AI and the next US-Russia confrontation – Centre for International Governance Innovation**

The Cold War (1947-1991) pitted two superpowers, the United States and the Soviet Union, against each other in a frantic nuclear arms race.

History is an eternal restart. After a period of relative calm, the arms race has resumed, no longer in nuclear weapons, but in artificial intelligence.

The two camps are fighting to see who can develop autonomous lethal weapons (tanks, drones, etc.) or who can control data and information. A third protagonist, China, is also involved.

This technological overkill in the field of armaments complicates the relative international stability and weakens the UN talks on the use of autonomous lethal weapons.

But as at the end of every major conflict, human beings have resigned themselves to being better, let us hope that this conflict will lead to agreements on the use of autonomous lethal weapons.

- **AI eggheads try to solve the Ukraine question – Protocol**

In the 21st century, it is no longer just the military (all corps) that is taking up arms. The tech giants and their researchers are taking up arms on social networks.

But instead of taking up arms to destroy lives, they are turning them to pacify the world.

These leading scientists are proposing to either reprioritise the use of AI or even restrict the use of AI to certain areas, such as weaponry.

- **Artificial Intelligence: Decoded Putin's high-tech war – Politico**

Whoever becomes the leader in this sphere will become the ruler of the world." With these words, in 2017, Putin clearly defined his ambition to want to rule the world by developing AI-based weapons and vehicles. After words, actions.

This is what Samuel BENDETT, an advisor at the Center for Naval Analyses, says in a report that indicates that Russia's armed forces (Air, Sea and Land) have autonomous weapons and vehicles with conventional ammunition and nuclear charges.

The Ukrainian battlefield, a huge data lake.
The use of AI serves the Russian army to analyse the data collected during the battles between the two factions but also from the Ukrainian population.

Advisor BENDETT highlights a possible cooperation between Russia and China with a sharing of data recovered during the conflict.

- **The Russia-Ukraine conflict is a test case for AI in warfare – Venture Beat**

Kyle Wiggers, in this well documented contribution, explores the different applications of AI being used in the Ukrainian conflict as a third revolution in warfare.

He concludes that the conflict in Ukraine will offer some answers as to whether the supposed advantage AI offers in warfare outweighs the consequences.

- **Russia's invasion of Ukraine reminds of an even scarier future possibility: Autonomous Weapons – The Washington Post**

Although there are not yet signs that “slaughterbots”, algorithms that help decide where and when a weapon should fire, have been deployed in Ukraine, Steven Zeitchik suggests that the activities playing out there hint at grimmer battlefields ahead.

- **The vulnerability of AI systems may explain why Russia isn't using them extensively in Ukraine – Forbes**

A Georgetown University think tank is trying to figure out why there is so little use of AI in the present crisis while advising U.S. policymakers of the risks of AI.

The Center for Security and Emerging Technology is attempting to draw policymakers’ attention to the growing body of academic research showing that AI and machine-learning (ML) algorithms can be attacked in a variety of basic, readily exploitable ways.

- **The Russia-Ukraine conflict is a test case for AI in warfare—Venture Beat**

It's becoming a test case for the role of technology in modern warfare AI, too, has been proposed—and is being used—as a way to help decisively turn the tide.

Social media algorithms like TikTok's have become a central part of the information war, surfacing clips of attacks for millions of people Meanwhile, Russian troll farms have used AI to generate human faces for fake, propagandist personas on Twitter, Facebook, Instagram, and Telegram.

Developing anomaly detection apps for cybersecurity and using natural language processing to identify disinformation.

We urgently must identify the vulnerabilities of today's machine learning … algorithms, which are now weaponized by cyberwarfare," Kai-Fu Lee, it would seem, rightly predicted that AI would be the third revolution in warfare, after gunpowder and nuclear weapons.

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