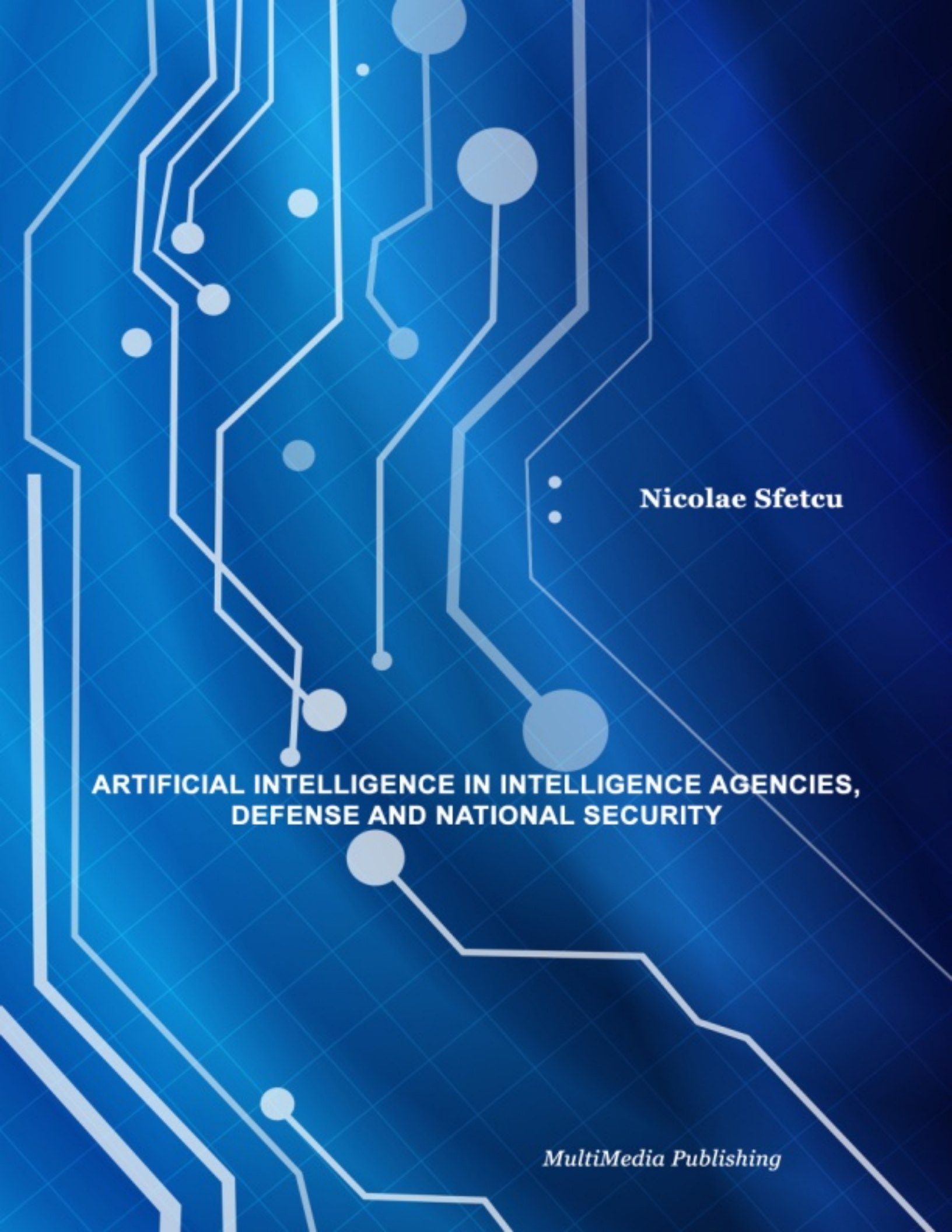

Nicolae Sfetcu

ARTIFICIAL INTELLIGENCE IN INTELLIGENCE AGENCIES, DEFENSE AND NATIONAL SECURITY

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Artificial Intelligence in Intelligence Agencies, Defense and National Security

BOOK PREVIEW

The Evolution of AI

Nicolae Sfetcu[1]

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Contents

Abstract

This book explores the use of artificial intelligence by intelligence services around the world and its critical role in intelligence analysis, defense, and national security. Intelligence services play a crucial role in national security, and the adoption of artificial intelligence technologies has had a significant impact on their operations. It also examines the various applications of artificial intelligence in intelligence services, the implications, challenges and ethical considerations associated with its use. The book emphasizes the need for continued research and development in the field of artificial intelligence to ensure that intelligence services. and overall national defense and security can effectively adapt to emerging threats.

Keywords: artificial intelligence, intelligence services, intelligence analysis, defense, national security, ethics

The evolution of AI

The role of AI in intelligence analysis has evolved significantly over the years. Initially, AI was mainly used for data management and processing, reducing the burden of information overload on analysts. With advances in machine learning, natural language processing and deep learning, AI can now perform more complex analytical tasks, providing a complementary level of insight to human analysts.

Intelligence agencies have used artificial intelligence since the beginning of the Cold War. The automatic translation of documents into foreign languages laid the foundation for modern natural language processing (NLP) techniques. Since the end of the Cold War, image analysis has helped identify potential terrorists by analyzing information and making predictions (Townley 2023). Thus, the Sound Surveillance System (SOSUS), a network of underwater acoustic sensors

was created in the USA to act as underwater listening stations for surface installations (Lakhwani et al. 2020).

In the late 1990s, the US Department of Defense developed plans for "network-centric" warfare by integrating artificial intelligence (Day 2016). Examples of projects are Nett Warrior (formerly Ground Soldier System or Mounted Soldier System) (Magrassi 2002b) and Force XXI Battle Command Brigade (Magrassi 2002a).

In the 21st century, national security organizations are using artificial intelligence to help them find, according to Dan Coats in 2017, innovative ways to exploit and establish the relevance and veracity of information (Coats 2021).

Around 2010 there was an explosion of interest in AI, due to the convergence of three favorable developments (Congressional Research Service 2020): (1) the availability of big data sources, (2) improvements in machine learning approaches , and (3) increasing processing power (Tang 2020). This led to the development of the weak form of AI, with algorithms for specific problems such as gaming, image recognition and navigation. Rapid advances in AI have sparked a wave of investment. Unclassified DoD (US) investment in AI has grown from just over $600 million in FY2016 to $2.5 billion in FY2021, with over 600 active AI projects (Smith 2019) (Congressional Research Service 2020).

In 2011, the Czech National Security Authority (NSA) was appointed as the national authority for the cyber agenda, with a special strategy for the integration of artificial intelligence and the defense of national security from this perspective (Kadlecová et al. 2020).

At the level of the European Union, the adoption of the Cybersecurity Strategy in 2013 by the European Commission (Kadlecová et al. 2020) boosted efforts to implement artificial intelligence. The EU finances various programs and institutions in this regard, such as Competence

Research Innovation (CONCORDIA), which brings together 14 member states (Davenport and Kalakota 2019) and Cybersecurity for Europe (CSE) (CS Europe 2023), which brings together 43 partners involving 20 by member states. The European Network of Cyber Security Centers and Competence Center for Innovation and Operations (ECHO) (EMK 2023) brings together 30 partners from 15 member states, and SPARTA (SPARTA 2023) consists of 44 partners involving 14 member states.

In 2016, the U.S. The Army Research Laboratory (ARL) created the Internet of Battlefield Things (IoBT) project to better integrate IoT technology into military operations (CRA 2017).

On July 20, 2017, the Chinese government launched a strategy to become the world leader in AI by 2030 (State Council 2017). In the same year, Vladimir Putin declared that "Whoever becomes the leader in this sphere will become the ruler of the world." (Simonite 2017)

In 2017, ARL established the Internet of Battlefield Things Collaborative Research Alliance (IoBT-CRA) to advance the theoretical foundations of IoBT systems (Polit 2018). Also, DARPA (USA) has developed a program called Ocean of Things, for an awareness of the persistent maritime situation on large oceanic areas (MeriTalk 2018).

(Internet of Battlefield Things technology in an unstructured, chaotic urban environment)

In 2018, the German government established a strategy for artificial intelligence, through a collaboration with the French, with tasks in cybersecurity. In Germany, artificial intelligence is addressed through cybersecurity, recognized as a government task with responsibilities divided among three ministries: Federal Ministry of the Interior, the Federal Ministry of Defense and the Federal Ministry of Foreign Affairs, and several institutions with specific objectives (Kadlecová et al. 2020).

The US National Defense Strategy, released in January 2018, identified artificial intelligence as one of the key technologies that will ensure that the United States will be able to fight and win the wars in the future. (Department of Defense 2018) The US National Intelligence Directorate issued the AIM Initiative in 2019 (AIM 2019), a strategy designed to add intelligence with the help of machines, allowing intelligence services to process huge amounts of data faster

than before and allow human intelligence officers to attend to other tasks. The US military has already integrated AI systems into combat through Project Maven to identify insurgent targets in Iraq and Syria (Weisgerber 2017b). In recent years, the US Department of Defense has initiated several projects based on IoMT and artificial intelligence, such as the Connected Soldier for smart personal equipment (Stackpole 2016).

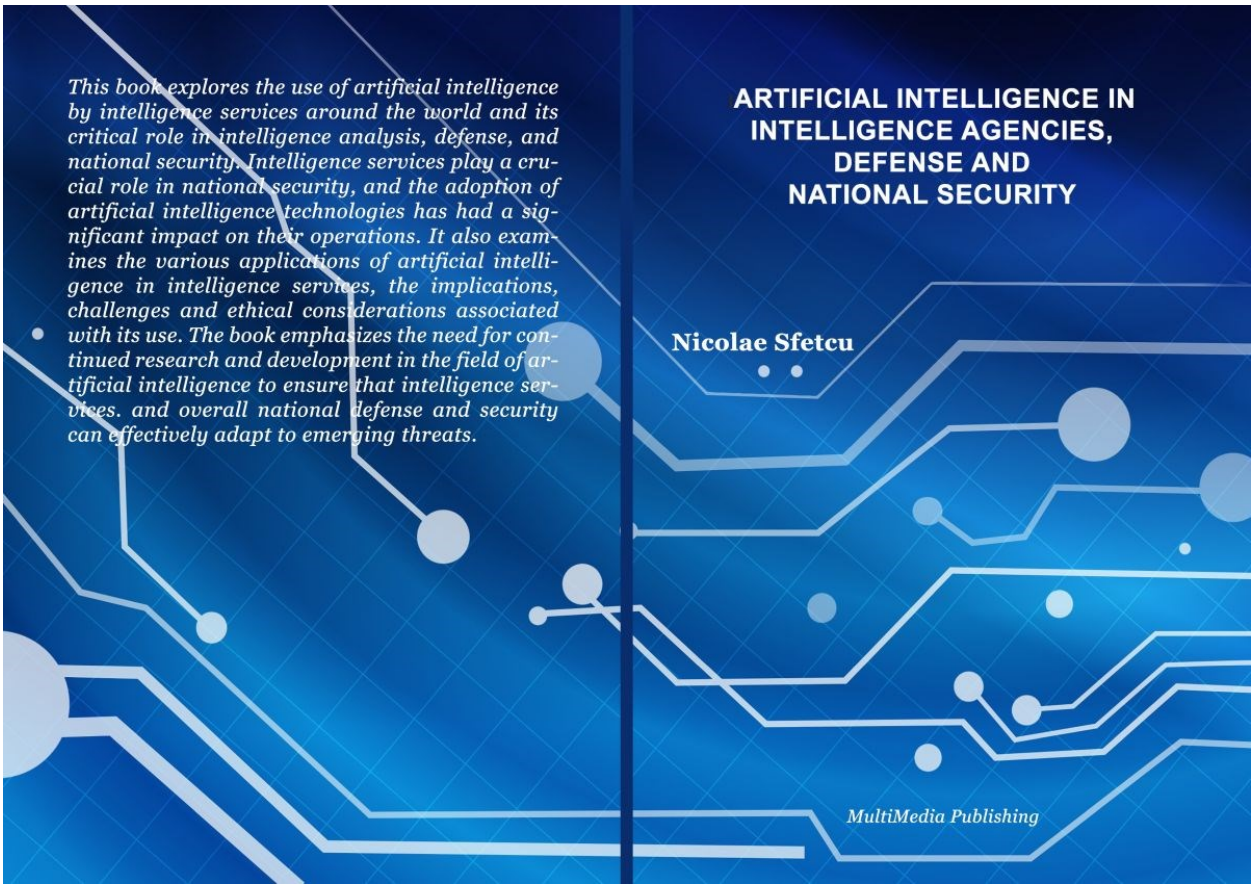
In the UK, the AI strategy is of particular relevance to all involved in Defense Force Development and Defense Transformation for an 'AI ready' system. It was implemented the Defense Digital Strategy (2021) (Ministry of Defence 2021b) and the Defense Data Strategy (2021) (Ministry of Defence 2021a), creating a new AI Digital Hub. Some elements will be provided or supported by panDefence, based on an IA strategy note (Ministry of Defence 2022).

A prominent use of artificial intelligence by Ukraine in its conflict with Russia is the use of facial recognition software to spot Russian attackers and identify Ukrainians killed in the ongoing war (Tegler 2022). Putin recognizes the power and opportunities of weapons using AI, stating that artificial intelligence is the future of all mankind (Gigova 2017). After Russia invaded Ukraine on February 24, 2022, the Ukrainian military uses drones (BSI 2023) that can take off, land and navigate autonomously, and that can receive information collected by US surveillance operations on intelligence on the ground combat and national security about Russia (Tucker 2022). Russia, for its part, is using AI to analyze battlefield data from surveillance images.

The AI arms race is underway, mainly between the great powers (Gambrell and Isidro 2022). There is currently a global campaign to ban the killer robots, with a petition (Vincent 2017) to the United Nations calling for new regulations on the development and use of AI technologies.

Contents

Book



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