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人工智慧與軍事作戰模擬發展

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摘要

臺海情勢具備作戰縱深淺、反應時間短特性，加上聯合作戰載具數量與日俱增、作戰環境複雜不斷變化，國軍無論是戰爭預防、戰爭準備與作戰策略的擬訂皆需要龐大的計算量，早已超越傳統作戰參謀作業所能應付。為了解決龐雜的資料分析問題並且尋求軍事決策最佳解決方案，藉由新興計算機資訊科技與軍事模式模擬，以及戰役戰術理論，已成為從過往軍事作戰訓練過程中汲取經驗發展戰略戰術的重要管道。本文從人工智慧角度出發，探討軍事作戰模擬特性，從而前瞻先進人機協同作戰與指揮決策輔助等作戰需求，並說明人工智慧與自主系統正在改變未來作戰形態，如何培養更多瞭解人工智慧的軍事科學家投入軍事作戰模擬的研究，已成為前瞻國防科技的重要議題。

關鍵詞：人工智慧、軍事作戰模擬、國防科技、模式與模擬、決策輔助

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Development of Artificial Intelligence in Military Operation Simulation

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Abstract

The situation of the Taiwan Strait includes characteristics of a shallow depth of battles and short response time. With an increasing number of joint operations of various vehicles and ever-changing, complicated warfare environments, the Republic of China Armed Forces need to make a lot of computations for war prevention, war preparation, and battle tactics, which have already exceeded the capability of traditional operational staff and administrative work. To analyze so much complicated data and to seek the optimal solution for military decision-making, emerging computer information technologies, military model simulations, and battle tactic theories have become important lessons based on the past military combat training processes and the development of strategies and tactics. This study explores the characteristics of military combat simulations from the perspectives of artificial intelligence to predict operational needs, including advanced human-machine coordinated operations and assistance in command decision-making. This study also shows that artificial intelligence and autonomous systems are changing operations for the future military. Therefore, training, research, and development for more military scientists in artificial intelligence for military combat simulations has been growing important topics in forward-looking national defense science and technology.

Keywords: artificial intelligence, military operation simulation, defense technology, modeling and simulation, decision making support

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