1. Record Nr. UNINA9910794514003321

Autore	Haigh Karen
Titolo	Cognitive Electronic Warfare : An Artificial Intelligence Approach
Pubbl/distr/stampa	Norwood : , : Artech House, , 2021 ©2021
ISBN	1-5231-4584-6 1-63081-812-7
Edizione	[1st ed.]
Descrizione fisica	1 online resource (261 pages)
Collana	Artech House electronic warfare library
Altri autori (Persone)	AndrusenkoJulia
Disciplina	623.043
Soggetti	Artificial intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
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Sommario/riassunto

This comprehensive book gives an overview of how cognitive systems and artificial intelligence (AI) can be used in electronic warfare (EW). Readers will learn how EW systems respond more quickly and effectively to battlefield conditions where sophisticated radars and spectrum congestion put a high priority on EW systems that can characterize and classify novel waveforms, discern intent, and devise and test countermeasures. Specific techniques are covered for optimizing a cognitive EW system as well as evaluating its ability to learn new information in real time. The book presents AI for electronic

support (ES), including characterization, classification, patterns of life, and intent recognition. Optimization techniques, including temporal tradeoffs and distributed optimization challenges are also discussed. The issues concerning real-time in-mission machine learning and suggests some approaches to address this important challenge are presented and described. The book covers electronic battle management, data management, and knowledge sharing. Evaluation approaches, including how to show that a machine learning system can learn how to handle novel environments, are also discussed. Written by experts with first-hand experience in AI-based EW, this is the first book on in-mission real-time learning and optimization.