1. Record Nr.	UNINA9910984592303321
Autore	Widrow Bernard
Titolo	Cognitive Memory : Human Memory / Machine Memory / / by Bernard Widrow, Edward P. Katz
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	9783031809392
	9783031809385
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (206 pages)
Collana	Springer Series on Bio- and Neurosystems, , 2520-8543 ; ; 17
Altri autori (Persone)	KatzEdward P
Disciplina	006.3
Soggetti	Computational intelligence
	Artificial intelligence
	Neural networks (Computer science)
	Computational Intelligence
	Artificial Intelligence
	Mathematical Models of Cognitive Processes and Neural Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	-- Part I The Cognitive Memory. -- 1 Overview. -- 2 Cognitive Memory. -- PART II Autoassociative Neural Networks and Cognitive Memory Design. -- 3 The LMS Algorithm. -- 4 ADALINE. -- 5 Sigmodal ADALINE. -- 6 Backpropagation for Multi-layer Neural Networks. -- 7 Autoassociative neural networks. -- 8 The design of a cognitive memory, etc.
Sommario/riassunto	How does human memory work? How does human pattern recognition work? The book's motivation is twofold, to add to knowledge in the field of neuroscience, and to design a highly simplified cognitive memory constructed using software and existing electronic components. Readers are taken on an inspiring journey through the fundamentals of human memory, how it is constructed, and how it works in everyday life. The book goes more in-depth into the human side of cognitive memory — how seeing, hearing, walking and speaking works. Impairments in cognitive memory are also discussed. Lastly, the book sheds light on how meaning is extracted from sensory inputs and from stored data. This book is not without controversy. Neuroscientists

accept the engrams (or memory traces) model that long-term memory is stored in the brain's neural networks. The authors believe that long-term human memory is stored digitally, in the DNA of brain cells, and not in analog neural networks. Further, the authors believe that innate knowledge of humans and animals is inherited, transmitted from parents to offspring at the moment of conception. The single cell contains the innate knowledge in the DNA of its nucleus. Memory is stored in DNA. The brain's neural networks are for access and retrieval of memory and not for actual storage. This book offers a unique, inspiring reading to researchers and other readers interested in the science of memory.