

1. Record Nr.	UNINA9910830306903321
Titolo	Complex-valued neural networks : advances and applications // edited by Akira Hirose
Pubbl/distr/stampa	Hoboken [New Jersey] : , : Wiley, , 2013 [Piscataway, New Jersey] : , : IEEE Xplore, , [2013]
ISBN	1-118-59006-6 1-118-59014-7
Descrizione fisica	1 online resource (310 p.)
Collana	IEEE Press Series on Computational Intelligence ; ; 18
Altri autori (Persone)	HiroseAkira <1963->
Disciplina	006.3/2 006.32
Soggetti	Neural networks (Computer science) Neural networks (Computer science) - Industrial applications
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
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## Sommario/riassunto

Presents the latest advances in complex-valued neural networks by demonstrating the theory in a wide range of applications. Complex-valued neural networks is a rapidly developing neural network framework that utilizes complex arithmetic, exhibiting specific characteristics in its learning, self-organizing, and processing dynamics. They are highly suitable for processing complex amplitude, composed of amplitude and phase, which is one of the core concepts in physical systems to deal with electromagnetic, light, sonic/ultrasonic waves as well as quantum waves, namely, electron.

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