1. Record Nr. UNINA9910484013903321

Autore	Shehab Mohammad
Titolo	Artificial Intelligence in Diffusion MRI : Enhanced Cuckoo Search Algorithm with Metaheuristic Components for Extracting the Maxima of the Orientation Distribution Function / / by Mohammad Shehab
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-36083-0
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (170 pages)
Collana	Studies in Computational Intelligence, , 1860-949X ; ; 877
Disciplina	616.07548
Soggetti	Computational intelligence Biomedical engineering Artificial intelligence Computational Intelligence Biomedical Engineering and Bioengineering Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction Of Diffusion MRI and Cuckoo Search Algorithm -- Background Of Diffusion MRI -- Cuckoo Search Algorithm -- Methodology Of Extracting The Odf Maxima Using Csa.
Sommario/riassunto	This book focuses on the use of artificial intelligence to address a specific problem in the brain – the orientation distribution function. It discusses three aspects: (i) Preparing, enhancing and evaluating one of the cuckoo search algorithms (CSA); (ii) Describing the problem: Diffusion-weighted magnetic resonance imaging (DW-MRI) is used for non-invasive investigations of anatomical connectivity in the human brain, while Q-ball imaging (QBI) is a diffusion MRI reconstruction technique based on the orientation distribution function (ODF), which detects the dominant fiber orientations; however, ODF lacks local estimation accuracy along the path. (iii) Evaluating the performance of the CSA versions in solving the ODF problem using synthetic and real-world data. This book appeals to both postgraduates and researchers who are interested in the fields of medicine and computer science. .