

1. Record Nr.	UNINA9910163012303321
Autore	Pinna Simone
Titolo	Extended Cognition and the Dynamics of Algorithmic Skills [[electronic resource] /] / by Simone Pinna
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	9783319518411
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XXVII, 122 p. 5 illus.)
Collana	Studies in Applied Philosophy, Epistemology and Rational Ethics, , 2192-6255 ; ; 35
Disciplina	518.1
Soggetti	Philosophy of mind Computers Neural networks (Computer science) Cognitive psychology Philosophy of Mind Computation by Abstract Devices Mathematical Models of Cognitive Processes and Neural Networks Cognitive Psychology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Turing's Theory of Computation -- Cognition as Organism-environment Interaction -- Ecological Approach and Dynamical Approach -- Modeling Algorithmic Skills: the Bidimensional Turing Machine -- BTM Models of Algorithmic Skills.
Sommario/riassunto	This book describes a novel methodology for studying algorithmic skills, intended as cognitive activities related to rule-based symbolic transformation, and argues that some human computational abilities may be interpreted and analyzed as genuine examples of extended cognition. It shows that the performance of these abilities relies not only on innate neurocognitive systems or language-related skills, but also on external tools and general agent–environment interactions. Further, it asserts that a low-level analysis, based on a set of core neurocognitive systems linking numbers and language, is not sufficient to explain some specific forms of high-level numerical skills, like those

involved in algorithm execution. To this end, it reports on the design of a cognitive architecture for modeling all the relevant features involved in the execution of algorithmic strategies, including external tools, such as paper and pencils. The first part of the book discusses the philosophical premises for endorsing and justifying a position in philosophy of mind that links a modified form of computationalism with some recent theoretical and scientific developments, like those introduced by the so-called dynamical approach to cognition. The second part is dedicated to the description of a Turing-machine-inspired cognitive architecture, expressly designed to formalize all kinds of algorithmic strategies.
