Record Nr. UNINA9911018896103321 Autore Burger John Robert <1940-> Titolo Human memory modeled with standard analog and digital circuits: inspiration for man-made computers / / John Robert Burger Hoboken,: Wiley, c2009 Pubbl/distr/stampa **ISBN** 9786612279027 9781282279025 1282279025 9780470464250 0470464259 9780470464199 0470464194 Edizione [1st edition] 1 online resource (384 p.) Descrizione fisica Disciplina 612.8/23312 Soggetti Memory - Computer simulation Artificial intelligence 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. HUMAN MEMORY MODELED WITH STANDARD ANALOG AND DIGITAL Nota di contenuto CIRCUITS; CONTENTS; PREFACE; 1 BRAIN BEHAVIOR POINTS THE WAY; Introduction; Modeling; Why Thinking Dissipates So Few Calories; The Miracle of Parallel Processing; Singularity; The Benefits of Reading This Book; Overview of the Book; Applications of the Models in the Book; Conclusions: Exercises: 2 NEURAL MEMBRANES AND ANIMAL ELECTRICITY; Introduction; The Physical Neuron; Ionic Solutions and Stray Electrons; Nernst Voltage; Ion-Channel Model; Applications; Conclusions; Exercises; 3 NEURAL PULSES AND NEURAL MEMORY; Introduction

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## Sommario/riassunto

Gain a new perspective on how the brain works and inspires new avenues for design in computer science and engineering This unique book is the first of its kind to introduce human memory and basic cognition in terms of physical circuits, beginning with the possibilities of ferroelectric behavior of neural membranes, moving to the logical properties of neural pulses recognized as solitons, and finally exploring the architecture of cognition itself. It encourages invention via the methodical study of brain theory, including electrically reversible neurons, neural networks, associative me