1. Record Nr. UNINA9910130871603321 Autore Fisher Michael <1962-> Titolo An introduction to practical formal methods using temporal logic [[electronic resource] /] / Michael Fisher Chichester, West Sussex, U.K.; Hoboken, N.J., : Wiley, c2011 Pubbl/distr/stampa **ISBN** 1-119-99146-3 1-283-40534-2 9786613405340 1-119-99148-X 1-119-99147-1 Edizione [1st edition] Descrizione fisica 1 online resource (710 p.) Disciplina 005.131 511.3 Soggetti Temporal automata Logic, Symbolic and mathematical Lingua di pubblicazione Inglese Materiale a stampa **Formato** Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Cover; Title Page; Copyright; Preface; Chapter 1: Introduction; 1.1 Aims of the Book; 1.2 Why Temporal Logic?; 1.3 What is Temporal Logic?; 1.4 Structure of the Book; Chapter 2: Temporal Logic; 2.1 Intuition; 2.2 Syntactic Aspects; 2.3 Semantics; 2.4 Reactive System Properties; 2.5 What is Temporal Logic?; 2.6 Normal Form; 2.7 Buchi Automata and Temporal Logic; 2.8 Advanced Topics; 2.9 Final Exercises; Chapter 3: Specification; 3.1 Describing Simple Behaviours; 3.2 A Semantics of Imperative Programs: 3.3 Linking Specifications: 3.4 Advanced Topics: 3.5 Final Exercises; 3.6 Where to Next? Chapter 4: Deduction4.1 Temporal Proof; 4.2 Clausal Temporal Resolution; 4.3 The TSPASS System; 4.4 Advanced topics; 4.5 Final Exercises; Chapter 5: Model Checking; 5.1 Algorithmic Verification; 5.2 Automata-Theoretic Model Checking; 5.3 The Spin System; 5.4 Advanced Topics; 5.5 Final Exercises; Chapter 6: Execution; 6.1 From Specifications to Programs; 6.2 METATEM: Executing Temporal Formulae; 6.3 The Concurrent MetateM system; 6.4 Advanced Topics;

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Sommario/riassunto

The name ""temporal logic"" may sound complex and daunting; but while they describe potentially complex scenarios, temporal logics are often based on a few simple, and fundamental, concepts - highlighted in this book. An Introduction to Practical Formal Methods Using Temporal Logic provides an introduction to formal methods based on temporal logic, for developing and testing complex computational systems. These methods are supported by many well-developed tools, techniques and results that can be applied to a wide range of systems. Fisher begins with a full introduction to the subject