1. Record Nr. UNINA9910465887203321

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Titolo	An Invitation to Knot Theory : Virtual and Classical / / by Heather A. Dye
Pubbl/distr/stampa	Boca Raton, FL : , : Chapman and Hall/CRC, , [2018] ©2016
ISBN	1-315-36238-4 1-315-37075-1 1-4987-9861-6 1-4987-0165-5
Edizione	[First edition.]
Descrizione fisica	1 online resource (285 pages) : illustrations, tables
Disciplina	514/.2242
Soggetti	Knot theory Electronic books.
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	Knots and crossingsVirtual knots and links CURVES IN THE PLANE VIRTUAL LINKS ORIENTED VIRTUAL LINK DIAGRAMS -- Linking invariants CONDITIONAL STATEMENTS WRITHE AND LINKING NUMBER DIFFERENCE NUMBER CROSSING WEIGHT NUMBERS -- A multiverse of knots FLAT AND FREE LINKS WELDED, SINGULAR, AND PSEUDO KNOTS NEW KNOT THEORIES -- Crossing invariants CROSSING NUMBERS UNKNOTTING NUMBERS UNKNOTTING SEQUENCE NUMBERS -- Constructing knots SYMMETRY TANGLES, MUTATION, AND PERIODIC LINKS PERIODIC LINKS AND SATELLITE KNOTS -- Knot polynomialsThe bracket polynomial THE NORMALIZED KAUFFMAN BRACKET POLYNOMIAL THE STATE SUM THE IMAGE OF THE F-POLYNOMIAL-- Surfaces SURFACES CONSTRUCTIONS OF VIRTUAL LINKS GENUS OF A VIRTUAL LINK -- Bracket polynomial II STATES AND THE BOUNDARY PROPERTY PROPER STATES DIAGRAMS WITH ONE VIRTUAL CROSSING -- The checkerboard framing CHECKERBOARD FRAMINGS CUT POINTS EXTENDING THE KAUFFMAN-MURASUGI-THISTLETHWAITE THEOREM-- Modifications of the bracket polynomial THE FLAT BRACKET THE ARROW POLYNOMIAL VASSILIEV INVARIANTS -- Algebraic

structuresQuandles TRICOLORING QUANDLES KNOT QUANDLES -- Knots and quandles A LITTLE LINEAR ALGEBRA AND THE TREFOIL THE DETERMINANT OF A KNOT THE ALEXANDER POLYNOMIAL THE FUNDAMENTAL GROUP -- Biquandles THE BIQUANDLE STRUCTURE THE GENERALIZED ALEXANDER POLYNOMIAL -- Gauss diagrams GAUSS WORDS AND DIAGRAMS PARITY AND PARITY INVARIANTS CROSSING WEIGHT NUMBER -- Applications QUANTUM COMPUTATION TEXTILES -- Appendix A: Tables Appendix B: References by Chapter-- Open problems and projects appear at the end of each chapter.

Sommario/riassunto

The Only Undergraduate Textbook to Teach Both Classical and Virtual Knot Theory. An Invitation to Knot Theory: Virtual and Classical gives advanced undergraduate students a gentle introduction to the field of virtual knot theory and mathematical research. It provides the foundation for students to research knot theory and read journal articles on their own. Each chapter includes numerous examples, problems, projects, and suggested readings from research papers. The proofs are written as simply as possible using combinatorial approaches, equivalence classes, and linear algebra. The text begins with an introduction to virtual knots and counted invariants. It then covers the normalized f-polynomial (Jones polynomial) and other skein invariants before discussing algebraic invariants, such as the quandle and biquandle. The book concludes with two applications of virtual knots: textiles and quantum computation.

2. Record Nr. UNINA9910260644903321

Titolo	Constraint-based reasoning / / edited by Eugene C. Freuder and Alan K. Mackworth
Pubbl/distr/stampa	Cambridge, Mass., : MIT Press, 1994
Descrizione fisica	1 online resource (403 pages) : illustrations
Altri autori (Persone)	FreuderEugene C MackworthAlan K
Disciplina	006.3
Soggetti	Constraints (Artificial intelligence) Reasoning
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"A Bradford book." Reprinted from Artificial intelligence, volume 58, numbers 1-3, 1992.
Sommario/riassunto	Constraint-based reasoning is an important area of automated reasoning in artificial intelligence, with many applications. These include configuration and design problems, planning and scheduling, temporal and spatial reasoning, defeasible and causal reasoning, machine vision and language understanding, qualitative and diagnostic reasoning, and expert systems. Constraint-Based Reasoning presents current work in the field at several levels: theory, algorithms, languages, applications, and hardware.Constraint-based reasoning has connections to a wide variety of fields, including formal logic, graph theory, relational databases, combinatorial algorithms, operations research, neural networks, truth maintenance, and logic programming. The ideal of describing a problem domain in natural, declarative terms and then letting general deductive mechanisms synthesize individual solutions has to some extent been realized, and even embodied, in programming languages.Contents :- Introduction, E. C. Freuder, A. K. Mackworth.- The Logic of Constraint Satisfaction, A. K. Mackworth.- Partial Constraint Satisfaction, E. C. Freuder, R. J. Wallace.- Constraint Reasoning Based on Interval Arithmetic: The Tolerance Propagation Approach, E. Hyvonen.- Constraint Satisfaction Using Constraint Logic

Programming, P. Van Hentenryck, H. Simonis, M. Dincbas.- Minimizing Conflicts: A Heuristic Repair Method for Constraint Satisfaction and Scheduling Problems, S. Minton, M. D. Johnston, A. B. Philips, and P. Laird.- Arc Consistency: Parallelism and Domain Dependence, P. R. Cooper, M. J. Swain.- Structure Identification in Relational Data, R. Dechter, J. Pearl.- Learning to Improve Constraint-Based Scheduling, M. Zweben, E. Davis, B. Daun, E. Drascher, M. Deale, M. Eskey.- Reasoning about Qualitative Temporal Information, P. van Beek.- A Geometric Constraint Engine, G. A. Kramer.- A Theory of Conflict Resolution in Planning, Q. Yang.A Bradford Book.