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Titolo	Algorithmics of matching under preferences // David F. Manlove, University of Glasgow, UK ; with a foreword by Kurt Mehlhorn
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ISBN	1-299-46251-0 981-4425-25-7
Descrizione fisica	1 online resource (xxxi, 491 pages)
Collana	Series on theoretical computer science, , 1793-849X ; ; v. 2
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Soggetti	Matching theory Marriage theorem Computer science - Mathematics
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.
Nota di contenuto	Preface; Foreword; Acknowledgments; Contents; List of Figures; List of Tables; List of Algorithms; 1. Preliminary definitions, results and motivation; 1.1 Introduction; 1.1.1 Remit of this book; 1.1.1.1 Matching under preferences; 1.1.1.2 Free-for-all markets; 1.1.1.3 Centralised matching schemes; 1.1.2 The matching problems under consideration; 1.1.2.1 Classification of matching problems; 1.1.2.2 Bipartite matching problems with two-sided preferences; 1.1.2.3 Bipartite matching problems with one-sided preferences; 1.1.2.4 Non-bipartite matching problems with preferences 1.1.2.5 Further problem variants 1.1.3 Existing literature on matching problems; 1.1.3.1 Algorithms and complexity literature; 1.1.3.2 Game theory and economics literature; 1.1.3.3 Algorithmic mechanism design literature; 1.1.4 Contribution of this book; 1.1.4.1 General overview; 1.1.4.2 Chapter outline; 1.1.4.3 What the book does not contribute; 1.1.5 Outline of this chapter; 1.2 Matchings in graphs; 1.3 The Hospitals / Residents problem (hr); 1.3.1 Introduction; 1.3.2 Key definitions; 1.3.3 Key results (up to 1989); 1.3.4 Stable Marriage problem (sm); 1.3.4.1 Key definitions

1.3.4.2 Key results (up to 1989) 1.3.4.3 Rotations; 1.3.5 Hospitals / Residents problem with indifference; 1.3.6 Other variants of hr; 1.3.6.1 Couples; 1.3.6.2 Many-many stable matchings; 1.3.6.3 Master lists; 1.3.7 Motivation; 1.4 The Stable Roommates problem (sr); 1.4.1 Introduction; 1.4.2 Key definitions; 1.4.3 Key results (up to 1989); 1.4.4 Rotations; 1.4.5 Stable Roommates problem with indifference; 1.4.6 Motivation; 1.5 The House Allocation problem (ha) and its variants; 1.5.1 Introduction; 1.5.2 Formal definition of ha and hm; 1.5.3 Pareto optimal matchings 1.5.4 Maximum utility matchings 1.5.5 Popular matchings; 1.5.6 Profile-based optimal matchings; 1.5.7 Extensions of ha; 1.5.8 Motivation; Stable Matching Problems; 2. The Stable Marriage problem: An update; 2.1 Introduction; 2.2 The 12 open problems of Gusfield and Irving; 2.2.1 Introduction; 2.2.2 1. Maximum number of stable matchings; 2.2.3 2. The "divorce digraph"; 2.2.4 3. Parallel algorithms for stable marriage; 2.2.5 4. Batch stability testing; 2.2.6 5. Structure of stable marriage with ties; 2.2.7 6. Sex-equal matching; 2.2.8 7. Lying and egalitarian matchings 2.2.9 10. Succinct certificates 2.2.10 11. Algorithmic improvements; 2.3 The Subramanian and Feder papers; 2.3.1 Subramanian: sri and network stability; 2.3.2 Feder: sri and 2-sat; 2.3.3 Other fixed-point approaches; 2.4 Linear programming approaches; 2.5 Constraint programming approaches; 2.5.1 Introduction; 2.5.2 Preliminaries; 2.5.3 Overview of the csp model; 2.5.4 Arc consistency in the csp model; 2.6 Paths to stability; 2.6.1 Introduction; 2.6.2 The Roth-Vande Vate Mechanism; 2.6.3 The Random Order Mechanism; 2.6.4 Other decentralised algorithms; 2.7 Median stable matchings 2.8 Size versus stability

## Sommario/riassunto

Matching problems with preferences are all around us - they arise when agents seek to be allocated to one another on the basis of ranked preferences over potential outcomes. Efficient algorithms are needed for producing matchings that optimise the satisfaction of the agents according to their preference lists. In recent years there has been a sharp increase in the study of algorithmic aspects of matching problems with preferences, partly reflecting the growing number of applications of these problems worldwide. This book describes the most important results in this area, providing a timely update

2. Record Nr.	UNINA9910485026803321
Autore	Arai Asao
Titolo	Inequivalent Representations of Canonical Commutation and Anti-Commutation Relations : Representation-theoretical Viewpoint for Quantum Phenomena // by Asao Arai
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2020
ISBN	981-15-2180-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XIX, 493 p. 6 illus.)
Collana	Mathematical Physics Studies, , 2352-3905
Disciplina	530.12
Soggetti	Mathematical physics Quantum theory Functional analysis Mathematical Physics Quantum Physics Functional Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Mathematical Preliminaries -- Representations of Canonical Commutation Relations with Finite -- Aharonov–Bohm Effect and Inequivalent Representations of CCR -- Time Operators -- Representations of Canonical Anti-commutation Relations with Finite Degrees of Freedom -- Elements of the Theory of Boson Fock Spaces -- Elements of the Theory of Fermion Fock Spaces -- Representations of CCR with Infinite Degrees of Freedom -- Representations of CAR with Infinite Degrees of Freedom -- Physical Correspondences in Quantum Field Theory.
Sommario/riassunto	Canonical commutation relations (CCR) and canonical anti-commutation relations (CAR) are basic principles in quantum physics including both quantum mechanics with finite degrees of freedom and quantum field theory. From a structural viewpoint, quantum physics can be primarily understood as Hilbert space representations of CCR or CAR. There are many interesting physical phenomena which can be more clearly understood from a representation–theoretical viewpoint with CCR or CAR. This book provides an introduction to representation

theories of CCR and CAR in view of quantum physics. Particular emphases are put on the importance of inequivalent representations of CCR or CAR, which may be related to characteristic physical phenomena. The topics presented include general theories of representations of CCR and CAR with finite and infinite degrees of freedom, the Aharonov–Bohm effect, time operators, quantum field theories based on Fock spaces, Bogoliubov transformations, and relations of infinite renormalizations with inequivalent representations of CCR. This book can be used as a text for an advanced topics course in mathematical physics or mathematics.

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