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# Ch1 Xavier Viennot

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A Short History

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From One to Several Variables

12th International Conference, FPSAC'00, Moscow, Russia, June 2000, Proceedings

A Combinatorial Viewpoint

IFIP 19th World Computer Congress, TC-6, 8th IFIP/IEEE Conference on Mobile and Wireless Communications Networks, August 20-25, 2006, Santiago, Chile

The Legend of King Aśoka

Volume 1: Biodiversity and Ecological Perspectives

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Analytic Theory of Continued Fractions

Foundations of Differential Calculus

Puzzles, Patterns, Problems, and Packings - Revised and Expanded Second Edition

Six Different Views

Models, Algorithms and Applications

Within and Beyond the Academy

Robot Motion Planning and Control

Inequality

From Christoffel Words to Markoff Numbers

Ghost Brothers

Representation Theory and Algebraic Geometry

Polyominoes

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## CAMERON ROCCO

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A Short History McGill-Queen's Press - MQUP

This book uses new mathematical tools to examine broad computability and complexity questions in enumerative combinatorics, with applications to other areas of mathematics, theoretical computer science, and physics. A focus on effective algorithms leads to the development of computer algebra software of use to researchers in these domains. After a survey of current results and open problems on decidability in enumerative combinatorics, the text shows how the cutting edge of this research is the new domain of Analytic Combinatorics in Several Variables (ACSV). The remaining chapters of the text alternate between a pedagogical development of the theory, applications (including the resolution by this author of conjectures in lattice path enumeration which resisted several other approaches), and the development of algorithms. The final chapters in the text show, through examples and general theory, how results from stratified Morse theory can help refine some of these computability questions. Complementing the written presentation are over 50 worksheets for the SageMath and Maple computer algebra systems working through examples in the text.

*The Creation of Anne Boleyn* JMS Books LLC

Algebraic Combinatorics and Coinvariant Spaces CRC Press

**The Arts of India, Southeast Asia, and the Himalayas at the Dallas Museum of Art** Springer Science & Business Media

This first English translation of the Asokavadana text, the Sanskrit version of the legend of King Asoka, first written in the second century A.D. Emperor of India during the third century B.C. and one of the most important rulers in the history of Buddhism. Asoka has hitherto been studied in the West primarily from his edicts and rock inscriptions in many parts of the Indian subcontinent. Through an extensive critical essay and a fluid translation, John Strong examines the importance of the Asoka of the legends for our overall understanding of Buddhism. Professor Strong contrasts the text with the Pali traditions about King Asoka and discusses the Buddhist view of kingship, the relationship of the state and the Buddhist community, the king's role in relating his kingdom to the person of the Buddha, and the connection between merit making, cosmology, and Buddhist doctrine. An appendix provides summaries of other stories about Asoka.

**Robot Motion Planning** Cambridge University Press

Youth has been represented on screen for decades and has informed many directors' visual, narrative and social perspectives, but there has not been a body of work addressing the richness and complexity of this topic in a French and Francophone context. This volume offers new insights into the works of emerging and well-established directors alike, who all chose to place youth at the heart of their narrative and aesthetic concerns. Showing how the topic of 'youth' has inspired filmmakers to explore and reinvent common tropes associated with young people, the book also addresses how the representation of youth can be used to mirror the tensions - political, social, religious, economic or cultural - that agitate a society at a given time in its history.

**Analytic Combinatorics in Several Variables** Cambridge University Press

The positive response to the publication of Blanton's English translations of Euler's "Introduction to Analysis of the Infinite" confirmed the relevance of this 240 year old work and encouraged Blanton to translate Euler's "Foundations of Differential Calculus" as well. The current book constitutes just the first 9 out of 27 chapters. The remaining chapters will be published at a later time. With this new translation, Euler's thoughts will not only be more accessible but more widely enjoyed by the mathematical community.

Screening Youth Springer Nature

In 1875, Elwin Bruno Christoffel introduced a special class of words on a binary alphabet linked to continued fractions which would go on to be known as Christoffel words. Some years later, Andrey Markoff published his famous theory, the now called Markoff theory. It characterized certain quadratic forms and certain real numbers by extremal inequalities. Both classes are constructed using certain natural numbers known as Markoff numbers and they are characterized by a certain Diophantine equality. More basically, they are constructed using certain words essentially the Christoffel words. The link between Christoffel words and the theory of Markoff was noted by Ferdinand Frobenius in 1913, but has been neglected in recent times. Motivated by this overlooked connection, this book looks to expand on the relationship between these two areas. Part I focuses on the classical theory of Markoff, while Part II explores the more advanced and recent results of the theory of Christoffel words.

*An Invitation to Analytic Combinatorics* Springer Science & Business Media

One of the ultimate goals in Robotics is to create autonomous robots. Such robots will accept high-level descriptions of tasks and will execute them without further human intervention. The input descriptions will specify what the user wants done rather than how to do it. The robots will be any kind of versatile mechanical device equipped with actuators and sensors under the control of a computing system. Making progress toward autonomous robots is of major practical interest in a wide variety of application domains including manufacturing, construction, waste management, space exploration, undersea work, assistance for the disabled, and medical surgery. It is also of great technical interest, especially for Computer Science, because it raises challenging and rich computational issues from which new concepts of broad usefulness are likely to emerge.

Developing the technologies necessary for autonomous robots is a formidable undertaking with deep interweaved ramifications in automated reasoning, perception and control. It raises many important problems. One of them - motion planning - is the central theme of this book. It can be loosely stated as follows: How can a robot decide what motions to perform in order to achieve goal arrangements of physical objects? This capability is eminently necessary since, by definition, a robot accomplishes tasks by moving in the real world. The minimum one would expect from an autonomous robot is the ability to plan its own motions.

European Conference on Combinatorics, Graph Theory and Applications Springer Science & Business Media

The first modern treatment of orthogonal polynomials from the viewpoint of special functions is now

available in paperback.

**Curtain Call** University Science Books

The ideological underpinnings of early modern theories of contagion are dissected in this volume by an integrated team of literary scholars, cultural historians, historians of medicine and art historians. Even today, the spread of disease inspires moralizing discourse and the ostracism of groups thought responsible for contagion; the fear of illness and the desire to make sense of it are demonstrated in the current preoccupation with HIV, SARS, 'mad cow' disease, West Nile virus and avian flu, to cite but a few contemporary examples. *Imagining Contagion in Early Modern Europe* explores the nature of understanding when humanity is faced with threats to its well-being, if not to its very survival.

*Mobile Technologies in the Ancient Sahara and Beyond* Dallas Museum of Art

One of the most authoritative and comprehensive books on the subject of continued fractions, this monograph has been widely used by generations of mathematicians and their students. Dr. Hubert Stanley Wall presents a unified theory correlating certain parts and applications of the subject within a larger analytic structure. Prerequisites include a first course in function theory and knowledge of the elementary properties of linear transformations in the complex plane. Some background in number theory, real analysis, and complex analysis may also prove helpful. The two-part treatment begins with an exploration of convergence theory, addressing continued fractions as products of linear fractional transformations, convergence theorems, and the theory of positive definite continued fractions, as well as other topics. The second part, focusing on function theory, covers the theory of equations, matrix theory of continued fractions, bounded analytic functions, and many additional subjects.

*Mobile and Wireless Communication Networks* Motilal Banarsidass Publ.

Fungi are an understudied, biotechnologically valuable group of organisms. Due to their immense range of habitats, and the consequent need to compete against a diverse array of other fungi, bacteria, and animals, fungi have developed numerous survival mechanisms. However, besides their major basic positive role in the cycling of minerals, organic matter and mobilizing insoluble nutrients, fungi have other beneficial impacts: they are considered good sources of food and active agents for a number of industrial processes involving fermentation mechanisms as in the bread, wine and beer industry. A number of fungi also produce biologically important metabolites such as enzymes, vitamins, antibiotics and several products of important pharmaceutical use; still others are involved in the production of single cell proteins. The economic value of these marked positive activities has been estimated as approximating to trillions of US dollars. The unique attributes of fungi thus herald great promise for their application in biotechnology and industry. Since ancient Egyptians mentioned in their medical prescriptions how they can use green molds in curing wounds as the obvious historical uses of penicillin, fungi can be grown with relative ease, making production at scale viable. The search for fungal biodiversity, and the construction of a living fungi collection, both have incredible economic potential in locating organisms with novel industrial uses that will lead to novel products. Fungi have provided the world with penicillin, lovastatin, and other globally significant medicines, and they remain an untapped resource with enormous industrial potential. Volume 1 of *Industrially Important Fungi for Sustainable Development* provides an overview to understanding fungal diversity from diverse habitats and their industrial application for future

sustainability. It encompasses current advanced knowledge of fungal communities and their potential biotechnological applications in industry and allied sectors. The book will be useful to scientists, researchers, and students of microbiology, biotechnology, agriculture, molecular biology, and environmental biology.

**From One to Several Variables** Brookings Institution Press

This book locates Christine de Pizan's argument that women are virtuous members of the political community within the context of earlier discussions of the relative virtues of men and women. It is the first to explore how women were represented and addressed within medieval discussions of the virtues. It introduces readers to the little studied *Speculum Dominarum* (Mirror of Ladies), a mirror for a princess, compiled for Jeanne of Navarre, which circulated in the courtly milieu that nurtured Christine. Throwing new light on the way in which Medieval women understood the virtues, and were represented by others as virtuous subjects, it positions the ethical ideas of Anne of France, Laura Cereta, Marguerite of Navarre and the Dames de la Roche within an evolving discourse on the virtues that is marked by the transition from Medieval to Renaissance thought. *Virtue Ethics for Women 1250-1500* will be of interest to those studying virtue ethics, the history of women's ideas and Medieval and Renaissance thought in general.

*12th International Conference, FPSAC'00, Moscow, Russia, June 2000, Proceedings* Springer

*The Beauty of Fractals* includes six essays related to fractals, with perspectives different enough to give you a taste of the breadth of the subject. Each essay is self-contained and expository. Moreover, each of the essays is intended to be accessible to a broad audience that includes college teachers, high school teachers, advanced undergraduate students, and others who wish to learn or teach about topics in fractals that are not regularly in textbooks on fractals.

*A Combinatorial Viewpoint* Springer Nature

Capturing Adriano Garsia's unique perspective on essential topics in algebraic combinatorics, this book consists of selected, classic notes on a number of topics based on lectures held at the University of California, San Diego over the past few decades. The topics presented share a common theme of describing interesting interplays between algebraic topics such as representation theory and elegant structures which are sometimes thought of as being outside the purview of classical combinatorics. The lectures reflect Garsia's inimitable narrative style and his exceptional expository ability. The preface presents the historical viewpoint as well as Garsia's personal insights into the subject matter. The lectures then start with a clear treatment of Alfred Young's construction of the irreducible representations of the symmetric group, seminormal representations and Morphy elements. This is followed by an elegant application of  $SL(2)$  representations to algebraic combinatorics. The last two lectures are on heaps, continued fractions and orthogonal polynomials with applications, and finally there is an exposition on the theory of finite fields. The book is aimed at graduate students and researchers in the field.

**IFIP 19th World Computer Congress, TC-6, 8th IFIP/IEEE Conference on Mobile and Wireless Communications Networks, August 20-25, 2006, Santiago, Chile** Houghton Mifflin Harcourt

This book discusses the representation theory of symmetric groups, the theory of symmetric functions and the polynomial representation theory of general linear groups. The first chapter

provides a detailed account of necessary representation-theoretic background. An important highlight of this book is an innovative treatment of the Robinson–Schensted–Knuth correspondence and its dual by extending Viennot's geometric ideas. Another unique feature is an exposition of the relationship between these correspondences, the representation theory of symmetric groups and alternating groups and the theory of symmetric functions. Schur algebras are introduced very naturally as algebras of distributions on general linear groups. The treatment of Schur–Weyl duality reveals the directness and simplicity of Schur's original treatment of the subject. In addition, each exercise is assigned a difficulty level to test readers' learning. Solutions and hints to most of the exercises are provided at the end.

CRC Press

In recent years, the Dallas Museum of Art has expanded its collection of South Asian art from a small number of Indian temple sculptures to nearly 500 works, including Indian Hindu and Buddhist sculptures, Himalayan Buddhist bronze sculptures and ritual objects, artwork from Southeast Asia, and decorative arts from India's Mughal period. Artworks in the collection have origins from the former Ottoman empire to Java, and architectural pieces suggest the grandeur of buildings in the Indian tradition. This volume details the cultural and artistic significance of more than 140 featured works, which range from Tibetan thangkas and Indian miniature paintings to stone sculptures and bronzes. Relating these works to one another through interconnecting narratives and cross-references, scholars and curators provide a broad cultural history of the region.

**The Legend of King Aśoka** Springer Science & Business Media

Nonholonomic Motion Planning grew out of the workshop that took place at the 1991 IEEE International Conference on Robotics and Automation. It consists of contributed chapters representing new developments in this area. Contributors to the book include robotics engineers, nonlinear control experts, differential geometers and applied mathematicians. Nonholonomic Motion Planning is arranged into three chapter groups: Controllability: one of the key mathematical tools needed to study nonholonomic motion. Motion Planning for Mobile Robots: in this section the papers are focused on problems with nonholonomic velocity constraints as well as constraints on the

generalized coordinates. Falling Cats, Space Robots and Gauge Theory: there are numerous connections to be made between symplectic geometry techniques for the study of holonomies in mechanics, gauge theory and control. In this section these connections are discussed using the backdrop of examples drawn from space robots and falling cats reorienting themselves.

Nonholonomic Motion Planning can be used either as a reference for researchers working in the areas of robotics, nonlinear control and differential geometry, or as a textbook for a graduate level robotics or nonlinear control course.

*Volume 1: Biodiversity and Ecological Perspectives* Springer

Inequality endangers the fabric of our societies, distorts the functioning of democracy, and derails the globalization process. Yet, it has only recently been recognized as a problem worth examining.

Why has this issue been neglected for so long? In *Inequality: A Short History*, Michele Alacevich and Anna Soci discuss the emergence of the inequality question in the twentieth century and explain how it is related to current issues such as globalization and the survival of democracy. The authors also discuss trends and the future of inequality. Inequality is a pressing issue that not only affects living standards, but is also inextricably linked to the way our democracies work.

*The Alsace Emigration Book* Springer Nature

How can a robot decide what motions to perform in order to achieve tasks in the physical world?

Robot motion planning encompasses several different disciplines, most notably robotics, computer science, control theory and mathematics. This volume presents an interdisciplinary account of recent developments in the field. Topics covered include: combining geometric algorithms and control techniques to account for the nonholonomic constraints of most mobile robots; the mathematical machinery necessary for understanding nonholonomic systems; applying optimal techniques to compute optimal paths; feedback control for nonholonomic mobile robots; probabilistic algorithms and new motion planning approaches; and a survey of recent techniques for dealing with collision detection.

*Classical and Quantum Orthogonal Polynomials in One Variable* Springer Science & Business Media

For any researcher working in representation theory, algebraic or arithmetic geometry.