Contents

Preface vii
Eigenconfigurations of tensors
    HIROTACHI ABO, ANNA SEIGAL, and BERND STURMFELS 1
Sum of squares basis pursuit with linear and second order cone programming
    AMIR ALI AHMADI and GEORGINA HALL 27
Helly’s theorem: New variations and applications
    NINA AMENTA, JESÚS A. DE LOERA, and PABLO SOBERÓN 55
Representation theory of the symmetric group in voting theory and game theory
    KARL-DIETER CRISMAN and MICHAEL E. ORRISON 97
Modeling the distribution of distance data in Euclidean space
    RUTH DAVIDSON, JOSEPH RUSINKO, ZOE VERNON, and JING XI 117
Geometric combinatorics and computational molecular biology: Branching polytopes for RNA sequences
    ELIZABETH DRELICH, ANDREW GAINER-DEWAR, HEATHER A. HARRINGTON, QIJUN HE, CHRISTINE HEITSCH,
    and SVETLANA POZNANOVIĆ 137
Polyhedral approaches to learning Bayesian networks
    DAVID HAWS, JAMES CUSSENS, and MILAN STUDENÝ 155
Neural network coding of natural images with applications to pure mathematics
    CHRISTOPHER J. HILLAR and SARAH E. MARZEN 189
Proving Tucker’s Lemma with a volume argument
    BEAUTTIE KUTURE, OSCAR LEONG, CHRISTOPHER LOA, MUTIARA SONDJAJA, and FRANCIS EDWARD SU 223
Factorization invariants in numerical monoids
    CHRISTOPHER O’NEILL and ROBERTO PELAYO 231
A survey of discrete methods in (algebraic) statistics for networks
    SONJA PETROVIĆ 251