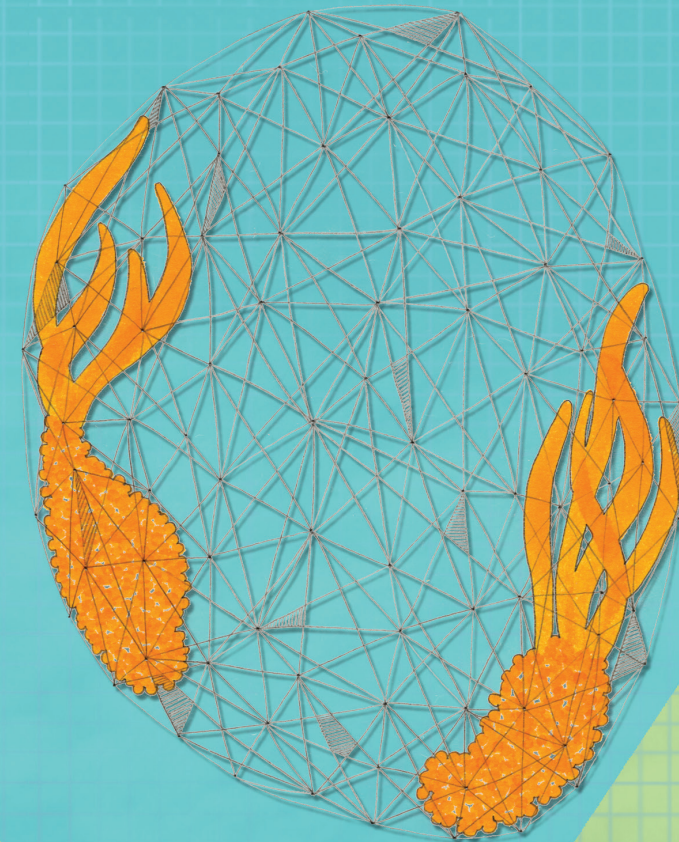


ALGEBRAIC AND GEOMETRIC IDEAS IN THE THEORY OF DISCRETE OPTIMIZATION



ALGEBRAIC AND GEOMETRIC IDEAS
IN THE THEORY OF DISCRETE OPTIMIZATION

Jesús A. De Loera
Raymond Hemmecke
Matthias Köppe

Jesús A. De Loera · Raymond Hemmecke · Matthias Köppe

This book presents recent advances in the mathematical theory of discrete optimization, particularly those supported by methods from algebraic geometry, commutative algebra, convex and discrete geometry, generating functions, and other tools normally considered outside the standard curriculum in optimization.

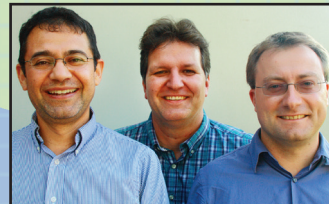
Algebraic and Geometric Ideas in the Theory of Discrete Optimization

- offers several research technologies not yet well known among practitioners of discrete optimization,
- minimizes prerequisites for learning these methods, and
- provides a transition from linear discrete optimization to nonlinear discrete optimization.

This book can be used as a textbook for advanced undergraduates or beginning graduate students in mathematics, computer science, or operations research or as a tutorial for mathematicians, engineers, and scientists engaged in computation who wish to delve more deeply into how and why algorithms do or do not work.

Jesús A. De Loera is a professor of mathematics and a member of the Graduate Groups in Computer Science and Applied Mathematics at University of California, Davis. His research has been recognized by an Alexander von Humboldt Fellowship, the UC Davis Chancellor Fellow award, and the 2010 INFORMS Computing Society Prize. He is an associate editor of *SIAM Journal on Discrete Mathematics* and *Discrete Optimization*.

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