Advances in Interdisciplinary Applied Discrete Mathematics

In the past 50 years, discrete mathematics has developed as a far-reaching and popular language for modeling fundamental problems in computer science, biology, sociology, operations research, economics, engineering, etc. The same model may appear in different guises, or a variety of models may have enough similarities such that same ideas and techniques can be applied in diverse applications.

This book focuses on fields such as consensus and voting theory, clustering, location theory, mathematical biology, and optimization that have seen an upsurge of new and exciting works over the past two decades using discrete models in modern applications. Featuring survey articles written by experts in these fields, the articles emphasize the interconnectedness of the mathematical models and techniques used in various areas, and elucidate the possibilities for future interdisciplinary research. Additionally, this book discusses recent advances in the fields, highlighting the approach of cross-fertilization of ideas across disciplines.