

# Preface

Arguably, the two most powerful operations research/management science (OR/MS) techniques are simulation and optimization. Simulation in this book will refer to stochastic simulation, whereby there is randomness in the system, also known as Monte Carlo simulation. Optimization dates back many centuries and is generally considered the older of the two siblings. Both approaches were propelled forward by the advent of the digital computer over half a century ago, leading up to the present golden age when both routinely address complex large-scale real-world problems and both are implemented in a large variety of computer software packages. However, combining the two techniques is a more recent development, and software effectively integrating the two is relatively limited; thus, simulation optimization remains an exciting and fertile area of research. The purpose of the handbook is to provide an overview of the state of the art of simulation optimization, comprising a survey of the most well-established approaches and a sampling of recent research advances in theory/methodology.

The single volume should serve as a reference for those already in the field and as a means for those new to the field for understanding and applying the main approaches to problems of interest. The intended audience includes researchers, practitioners, and graduate students in the business/engineering fields of operations research, management science, operations management, and stochastic control, as well as in economics/finance and computer science.

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