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Decision Support and Expert Systems in Intelligent Transportation

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Preface

Intelligent transportation systems are essential parts of our life and provide various services such as data collection and processing, traffic management, travel information, public transit, freight transportation, and rescue management. These systems' objectives are improving safety, security, congestion, economic productivity, fuel-saving, and efficiency. Intelligent transportation systems are incorporated with information technology, wireless communication, smartphones, the Internet of Things (IoT), and Unmanned Aerial Vehicle (UAV) to solve transportation problems. This book has been involved in this field by focusing on the Decision Support System (DSS) and expert system. DSS supports decision-making processes, and expert systems can be applied for decision making soon. In this book, first, the basic concepts of intelligent transportation are presented. Then, the principles of decision-making and expert systems are examined. In the following, transportation problems are divided into general structured models, advanced structured models, and non-structured models. Based on the outlined frameworks, several advanced transportation systems and smart city systems are explained. The last two chapters will cover decision-making and expert systems in autonomous cars and smart roads. The study of this book is recommended to those who are interested in interdisciplinary studies of transportation.

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