## **Contents**

1	Policies Under Price Uncertainty Zhi-xue Xie and Li Zheng	1
2	A Class of Robust Solution for Linear Bilevel Programming Bo Liu, Bo Li and Yan Li	11
3	A Comparison of the Modified Likelihood-Ratio-Test-Based Shewhart and EWMA Control Charts for Monitoring Binary Profiles	23
	Chao Yin, Yihai He, Zhen Shen and Chun-hui Wu	
4	A Decision-Making Model of Price Control for Administering Authority	31
5	A Method for Multiple Attribute Decision Making without Weight Information but with Preference Information on Alternatives	41
6	A Prediction of the Container Throughput of Jiujiang Port Based on Grey System Theory	51
7	A Rapid Data Processing and Assessing Model for "Scenario-Response" Types Natural Disaster Emergency Alternatives	61

8	A Research on Value of Individual Human Capital of High-Tech Enterprises Based on the BP Neural Network Algorithm	71
9	A Stochastic Programming Model for Evaluating Real Options in Wind Power Investment Projects	81
10	Action Recognition Based on Hierarchical Model	93
11	Adaptive Ant Colony Algorithm Researching in Cloud Computing Routing Resource Scheduling Zhi-gao Chen	101
12	An Empirical Analysis on Guangdong Industrial Energy Intensity Based on Panel Data Xin-dong Hao	109
13	An Empirical Research on the Ability of Sustainable Development for Coal Resource Exhausted Cities	115
14	An Extensive Innovation Procedure to Quality Function Deployment for Product Design	125
15	Analysis on Grey Relation of Labor Export Mechanism's Influence Factors in Poverty-Stricken Areas	137
16	Analysis on Trend of Research and Development Intensity in China	149
17	Application of IE Method in Modern Agro-Ecological Park Planning	157
18	Application of Improved Grey Prediction Model for Chinese Petroleum Consumption	171

19	Applying an Integrated SOM Model on Studying Corporate Governance Data	177
20	Applying Constraint Satisfaction Methods in Four-Bar Linkage Design	189
21	Appraisal of Estate Enterprise's Social Responsibility Based on ANP and Fuzzy Theory	199
22	Bottleneck Detection Method Based on Production Line Information for Semiconductor Manufacturing System Xiao-yu Yu, Fei Qiao and Yu-min Ma	209
23	Clinical Decision Support Model of Heart Disease Diagnosis Based on Bayesian Networks and Case-Based Reasoning Man Xu and Jiang Shen	219
24	Construction of Project Management Classification Frame and Classification Controlling Model Based on Project Portfolio	227
25	Product Material Combination Image Method Based on GEP	235
26	D2-Index: A Dynamic Index Method for Querying XML and Semi-Structured Data	245
27	<b>Data Preprocessing in Web Usage Mining</b> Xiang-ying Li	257
28	Design Knowledge Reduction Approach Based on Rough Sets of HCI	267
29	Diagnostic Testing and Analysis of CAN Data Bus Based on the Sagitar Power Transmission System	279

30	Effectiveness to Driving by Interbeds in Channel Sand of River Delta System	289
31	Effectiveness Valuation of Electronic Countermeasure on Ground Air Defense and Anti-missile	301
32	Energy Consumption and Economic Growth: Cointegration and Granger Causality Test Jing-wei Liang and Zhou Liu	313
33	Estimation of Lead Time in the RFID-Enabled Real-Time Shopfloor Production with a Data Mining Model Ray Y. Zhong, George Q. Huang, Qing-yun Dai and Tao Zhang	321
34	Evaluation of Green Residence Using Integrated Structural Equation Model with Fuzzy Theory	333
35	Evaluation of Population Age Structure Model Using Grey Clustering Theory	345
36	Evaluation of Recycle Level of Qaidam Salt Lake Circular Economy with Intuitionistic Fuzzy Entropy Measures Fei Feng, Yu Liu, Jian Zhang, Nan Wang and Xiao-hui Xing	353
37	Evolution Analysis of Standardization Production Behavior in GI Agricultural Product Enterprise Cluster	361
38	Forecasting of Vehicle Capacity Based on BP Neural Network Ya-qin An, Ya-jun Wang and Wen-wei Gao	369
39	Fuzzy Data Mining with TOPSIS for Fuzzy Multiple Criteria Decision Making Problems Chin-yao Low and Sung-nung Lin	377
40	Knowledge Discovery from Granule Features Mining Jian-hong Luo, Xi-yong Zhu and Xiao-jun Wang	391

Contents ix

41	Multivariable Forecasting Model Based on Trend Grey Correlation Degree and its Application	403
42	Partner Selection About the PPP Reclaimed Water Project Based on Extension Evaluation Method	411
43	Personnel BDAR Ability Assessment Model Based on Bayesian Stochastic Assessment Method	419
44	Power Control of Cellular System in CDMA Technology Integrated with SIC	427
45	Research of Embedded Intelligent Decision Support System for Natural Disasters	439
46	Research on Classifying Interim Products in Ship Manufacturing Based on Clustering Algorithm Lin Gong, Yan Song, Hao Lin and Zi-xu Chen	449
47	Research on Financial Accounting Information Disclosure of China's Social Security Fund Based on Game Analysis Sha-sha Dai, Ke Pan and Yuan-yuan Dai	459
48	Research on the Multi-Target Tracking Algorithm Based on Double FPGA	47]
49	A Study of the Effect of Xi'an Subway on the Rent of Office Building	479
50	Urban-Rural Income Gap in China: Evolutionary Trend and Influencing Factors	487
51	Sensitivity Analysis on Optimized Sampling for Sealing Performance of GVTP	499

х

52	Study on Application of Logistic Curve Fitting and Forecast from Inbound Tourist Market	509
53	Study on Decision Mechanism Choosing by Cost Model for Projectized Organization	519
54	Study on Impact of Investor's Herd Behavior on Corporation Investment Behavior	527
55	Study on the Evaluation Framework of Enterprise Informationization	535
56	Supplier Selection Model Based on the Interval Grey Number	543
57	The Accuracy Improvement of Numerical Conformal Mapping Using the Modified Gram-Schmidt Method Yi-bin Lu, De-an Wu, Ying-zi Wang and Sha-sha Zheng	555
58	The Application of AHP in Biotechnology Industry with ERP KSF Implementation	565
59	Application of Gray Correlation Method in the Employment Analysis of Private Enterprises	575
60	The Design of Three-Dimensional Model for the Economic Evaluation of the Coal Enterprise Informationization	583
61	The Effects Decomposition of Carbon Emission Changes and Countermeasures in Shandong Province:  Based on De Bruyn's Factors Decomposition Model Guo-hua Wu, Jin-sheng Hou and Lin Wu	591

62	The Empirical Research of the Causality Relationship Between CO <sub>2</sub> Emissions Intensity, Energy Consumption Structure, Energy Intensity and Industrial Structure in China	601
	Tao Zhao and Xiao-song Ren	
63	The Evaluation of China Construction Industry Sustainable Development on DEA Model Peng-Yang Liu, Jian-Ping Yang and Fan-Fang Wen	611
64	The Prediction of Customer Retention Costs Based on Time Series Technique	621
65	The Research on the Location Selection of the Bank Outlets Based on Triangular Fuzzy Analytic Hierarchy Process	627
66	The Study of Sino-Russian Trade Forecasting Based on the Improved Grey Prediction Model Zhen-zhong Zhang, Shuang Liu and Li-xia Tian	637
67	The Role of Preference and Emotion in Environmental Risk Perception	645
68	The Model Research on Risk Control	653
69	TOPSIS Based Power-Saving Plans Choice for Manufacturing Enterprise	661
70	Research on Central Control DDSS System for Fund Portfolio Management	669
71	The Evaluation and Application of Residential Structure System Based on Matter-Element Model	677

72	Logistic Financial Crisis Early-Warning Model Subjoining Nonfinancial Indexes for Listed Companies Shao-fang Ding, Ying-chao Hou and Pei-pei Hou	685
73	Evaluation Research on Logistics Development of the Yangtze River Port Based on the Principal Component Analysis	697
74	A Game Analysis of New Technical Equipment Procurement  Ai-hua Zhang, Zhi-wei Yang, Qiong Zhang and Hong-wei Fu	703
75	Constructing Performance Measurement Indicators in the Government' Information Unit in Taiwan: Using Balanced Scorecard and Fuzzy Analytic Hierarchy Process	709
76	A Decision Model and Its Algorithm for Vehicle Routing Problem to Meet Emergencies	717
77	A Solution to Optimize Enterprise Business and Operation Process	727
78	An Approach with Nested Partition for Resource-Constrained Project Scheduling Problem	737
79	An Approximate Dynamic Programming Approach for Computing Base Stock Levels	749
80	An Inventory Model Considering Credit Cost and Demand Rate Varying with Credit Value	759
81	An M/M/1 Queue System with Single Working Vacation and Impatient Customers	767
82	Analysis of Bank Queueing Based on Operations Research Liang Li, Jia-lin Wu and Jin-xiang Ding	777

Contents xiii

83	Application of DEA-Malmquist Index in Analyzing Chinese Banking's Efficiency	789
	Man Ding, Chao-qun Ma, Zhong-bao Zhou and Wen-bin Liu	
84	The Improvement on R. G. Bland's Method Yu-bo Liao	799
85	Influence Mechanism of Lean Production to Manufacturing Enterprises' Competitiveness	805
86	Mobile Device User Research in Different Usage Situation Wei Liu and Jiu-zhou Li	815
87	Optimal Enterprise Cash Management Under Uncertainty Xiao-yun Wei and Li-yan Han	825
88	Problem Analysis and Optimizing of Setting Service  Desks in Supermarket Based on M/M/C Queuing System  Chun-feng Chai	833
89	Proposed a Novel Group Scheduling Problem in a Cellular Manufacturing System	843
90	Regional Eco-Environment Optimization Based on Multiple Parallel Sub-Systems' Efficiency	855
91	Research on Brand Strategy to Small and Medium-Sized Enterprises	865
92	Research on Information Mining About Priority Weight of Linguistic Judgment Matrix	873
93	Research on the Project Hierarchy Scheduling for Domestic Automobile Industry	883

94	SVM-Based Multi-Sensor Information Fusion Technology Research in the Diesel Engine Fault Diagnosis  Jian-xin Lv, Jia Jia and Chun-ming Zhang	891
95	The Purchase House Choice Research Based on the Analytic Hierarchy Process (AHP)	897
96	The Relations Tracking Method of Establishing Reachable Matrix in ISM	903
97	The Selection of the Regional Center City Under the Policy of Expanding Domestic Demand	913
98	A Research on Mine Pressure Monitoring Data Analysis and Forecast Expert System of Fully Mechanized Coal Face Hong-bing Qiao, Hai-long Xu, Ao-shuang Pang, Chang-dong Zhou and Yi-lun Wang	925
99	The U-Shaped Relationship Between Corporate Social Disclosure and Corporate Performance: Evidence from Taiwan's Electronics Industry	935
100	Empirical Study on the Five-Dimensional Influencing Factors of Entrepreneurial Performance Xin Lan	945
101	A Multistart Local Search Heuristic for Knapsack Problem Geng Lin	957
102	Heterogeneity of Institutional Investors and Investment Effects: Empirical Evidence from Chinese Securities Market Ying Jin	963
103	Integer Linear Programming Model and Greedy Algorithm for Camping Along the Big Long River Problem Zhen-ping Li and Xiao-dong Huang	973
104	Research on End Distribution Path Problem of Dairy Cold Chain	983

Contents xv

105	Improved Evolutionary Strategy Genetic Algorithm for Nonlinear Programming Problems	993
106	Simulation and Optimization of a Kind of Manufacturing and Packing Processes	1005
107	Equilibrium and Optimization to the Unequal Game of Capital-Labor Interest	1015
108	Innovative and Entrepreneurship Education in Underdeveloped Western Regions of China	1023
109	Network-Based Optimal Design for International Shipping System	1031
110	A Dynamic Analytic Approach to Study on the Interaction Between Product Innovation and Process Innovation of the Equipment Manufacturing Enterprises	1037
111	A Multi-agent Simulation System Considering Psychological Stress for Fire Evacuation	1047
112	A Multi-Granularity Model for Energy Consumption Simulation and Control of Discrete Manufacturing System Jun-feng Wang, Shi-qi Li and Ji-hong Liu	1055
113	Analysis on System Archetype of High College and University Competitiveness Based on Hierarchical Structure	1065
114	Analysis on the Operation Effects of Logistics Park Based on BP Neural Network	1073

115	Application of Ant Colony Algorithm on Secondary Cooling Optimization of Continuous Slab	1081
116	Application of the Catastrophe Progression Method in Employment Options for Beijing, Shanghai and Guangzhou	1089
117	Cooperation Relationship Analysis of Research Teams Based on Social Network Analysis and Importance Measures Zheng-sheng Han and Zhi-qiang Cai	1099
118	Establishment of Construction Standard System Based on the Complex System Theory	1109
119	Location Selection of Coal Bunker Based on Particle Swarm Optimization Algorithm	1121
120	Mechanism of Firm's Response to Innovation Policy in Industrial Cluster: Based on Echo Model	1129
121	Modeling and Simulation of Troubleshooting Process for Automobile Based on Petri Net and Flexsim	1141
122	Modeling and Simulation of Wartime Casualty Surgical Treatment	1155
123	Modeling of Shipboard Aircraft Operational Support Process Based on Hierarchical Timed Colored Petri-Net	1167
124	Modeling and Simulation of a Just-in-Time Flexible  Manufacturing System Using Petri Nets	1179

125	Numerical Simulation of External-Compression Supersonic	1187
	Inlet Flow Fields  Ping Wang, Hong-wei Wang, Si-dong Wei, Xue-shan Liu, Qing-guo Zhang and Xin Hua	1107
126	Ontology-Based Multi-Enterprise Heterogeneous Model	
	Fusion Method	1195
127	Outpatient Scheduling in Highly Constrained Environments:	
	A Literature Review	1203
128	Realization of 3D Reconstruction of CAD Model Based	
	on Slicing Data	1215
129	Recommender System Based "Scenario-Response"	1005
	Types Post-Disaster Emergency Supplies Planning Gang Kou, Xin Zhao and Daji Ergu	1225
130	Research on the Simulation Case of Traffic Accident	1235
131	Regional Brand Development Model Under the Perspective	
	of System Theory	1241
132	Research on Bayesian Estimation of Time-Varying Delay Meng Wang, Ying Liu and Ji-wang Zhang	1251
133	Research on Design and Analysis Platform	
	for Modular Spacecraft	1263
134	Research on H-Point of Driver Based on Human Physical	1050
	Dimensions of Chinese People	1273
135	Research on Modeling Framework of Product Service System	
	Based on Model Driven ArchitectureXin-zhi Zhao and Xin Cai	1283

136	Research on the Civil Aircraft Customer Service System Simulation Based on SD Model	1291
137	Research on the Modeling Method of Wargaming for Equipment Support on Computer	1301
138	Risk Sharing Proportion of Cooperation Between the Banks and Guarantee Agencies Based on Elman Neural Network Jun Liang and Qiang Mei	1309
139	Simulation Analysis on Effect of the Orifice on Injection Performance	1317
140	Simulation and Optimization Analysis of a Wharf System Based on Flexsim	1325
141	Simulation Design of Piezoelectric Cantilever Beam Applied on Railway Track	1335
142	Simulation of Scenic Spots Dynamic Pricing Based on Revenue Management	1345
143	Study of Adaptive Noise Cancellation Controller	1353
144	Study of Cost-Time-Quality in Project Failure Risk Assessment Basedon Monte Carlo Simulation	1361
145	Study on Innovation and Practice of Independent Auto Companies Lean Digital Factory Building	1369
146	The Application of Kernel Estimation in Analysis of Crime Hot Spots	1379

Contents xix

147	The Research of Full-Bridge and Current Double Rectifier Switched-Mode Power Supply for Vehicle Yi-lin Yin, Rui-peng Chen and Xi-ming Cheng	1387
148	The Research of Industrial Optimization of Beijing CBD Ribbon Based on Fitness Function Mode Youliang Zhang and Gang Zong	1401
149	A Study on the User Acceptance Model of SNS Websites Based TAM	1409
150	Augmented Reality Based Factory Model Comparison Method	1421
151	An Evaluation Method Based on Cloud Model for the Credit of High-Tech SMEs	1427
152	The Structural Optimum Design of Erected Circular Medicine-Chest Based on Non-Intervention Motion Zhi-qiang Zhang, Chao Yun, Xiang-quan Liu and Li-yong Wang	1437
153	Application of Noise Estimator with Limited Memory Index on Flexure Compensation of Rapid Transfer Alignment Wei-dong Zhou and Yu-ren Ji	1447
154	A Cumulative SaaS Service Evolution Model Based on Expanded Pi Calculus	1457
155	Permanence and Extinction of Periodic Delay Predator-Prey System with Two Predators and Stage Structure for Prey Wei-wei Zheng and Er-dong Han	1469
156	Design of Military Logistics Management System Based on Internet of Things Technology	1481
157	Simulation and Optimization of the Steel Enterprise  Raw Material System	1489

158	Comprehensive Evaluation and Optimizing for Boarding Strategies	1499
	Da-wei Sun, Xia-yang Zheng, Zi-jun Chen and Hong-min Wang	
159	Modeling for Crime Busting	1507
160	Personalized Emotion Model Based on Support Vector Machine	1519
161	Research on Decision-Making Behavior Test System for Top Management Team Based on Simulation Environment Xue-ying Hong, Zhu-chao Yu, Zhu Wang and Yang Jiang	1527
162	An Exploratory System Dynamics Model of Business  Model Evolution	1535
163	An Empirical Study on the Influence of Independent Directors on Fund Performance in China Fund Management Company	1545
164	Research on Optimal Enterprise Contribution of Hunan Province Based on OLG Model	1557
165	Comprehensive Experiment Design of Production Logistics Based on CDIO	1567
166	Improved Grey Forecasting Model for Taiwan's Green GDP Accounting	1575
167	Simulation Research of the Fuzzy Torque Control for Hybrid Electrical Vehicle Based on ADVISOR	1585
168	Vulnerability Analysis and Assessment System of Natural Disaster	1593
	Jiang Shen, Jing Huang, Tao Li and Man Xu	

169	Application of Actuarial Model in the Forecast of Maternity Insurance Fund's Revenue and Expenditure:  A Case Study of Tianjin	1601
170	Study on Process Reengineering of Medium and Small Coal Machine Manufacture Enterprises  Jing-wen An and Zhi-qiang Zhang	1611
171	The Increase and Decrease Connecting Potential Analysis on Urban and Rural Residential Land of Tianjin	1623
172	Study on Re-Evaluation of Technological Innovation Efficiency Based on the C <sup>2</sup> R Improvement Model in Zhongguancun High-Tech Enterprises	1637
173	Research on the Strategic Management of Small and Medium Enterprises in China	1649