

# Contents

<b>1</b>	<b>Introduction to Preference Query Analysis and Optimization</b>	<b>1</b>
1.1	Query Analysis and Optimization	1
1.2	Preference Queries	3
1.2.1	Quantitative Preference Queries	3
1.2.2	Qualitative Preference Queries	4
1.3	Research Issues and Challenges	4
1.4	Overview of the Book	6
	References	6
<b>2</b>	<b>Causality and Responsibility Problem on Probabilistic Reverse Skyline Queries</b>	<b>9</b>
2.1	Introduction	9
2.2	Related Work	12
2.3	Problem Statement	13
2.3.1	CRP Formulation	13
2.3.2	CR2PRSQ Formulation	14
2.4	CP Algorithm	16
2.5	Discussion	22
2.6	Performance Study	24
2.6.1	Experimental Setup	24
2.6.2	Experimental Results	25
2.7	Conclusion	28
	References	28
<b>3</b>	<b>Why-Not and Why Questions on Reverse Top-<math>k</math> Queries</b>	<b>31</b>
3.1	Introduction	31
3.2	Related Work	35
3.3	Problem Statement	35
3.4	Answering Why-Not Questions	39
3.4.1	Modifying Query Point	40

3.4.2	Modifying Why-Not Weighting Vector and $k$ . . . . .	45
3.4.3	Modifying Query Point, Why-Not Weighting Vector, and $k$ . . . . .	51
3.5	Answering Why Questions . . . . .	54
3.5.1	Modifying Query Point . . . . .	54
3.5.2	Modifying Why Weighting Vector and $k$ . . . . .	58
3.5.3	Modifying Query Point, Why Weighting Vector, and $k$ . . .	61
3.6	Performance Study . . . . .	63
3.6.1	Experimental Setup . . . . .	63
3.6.2	Results on Why-Not Questions . . . . .	64
3.6.3	Results on Why Questions . . . . .	69
3.7	Conclusion . . . . .	73
	References . . . . .	73
<b>4</b>	<b>Why-Few and Why-Many Questions on Reverse Skyline Queries</b> . . . . .	<b>75</b>
4.1	Introduction . . . . .	75
4.2	Related Work . . . . .	78
4.3	Problem Statement . . . . .	79
4.4	Answering Why-Few and Why-Many Questions . . . . .	80
4.4.1	RI Algorithm . . . . .	80
4.4.2	SP Algorithm . . . . .	86
4.5	Performance Study . . . . .	93
4.5.1	Experimental Settings . . . . .	94
4.5.2	Experimental Results . . . . .	94
4.6	Conclusion . . . . .	97
	References . . . . .	98
<b>5</b>	<b>Reverse Top-<math>k</math> Query Result Analysis and Refinement System</b> . . . .	<b>101</b>
5.1	Introduction . . . . .	101
5.2	System Overview . . . . .	103
5.3	Demonstration . . . . .	104
	References . . . . .	108
<b>6</b>	<b>Conclusion and Future Work</b> . . . . .	<b>109</b>
6.1	Conclusions . . . . .	109
6.2	Future Work . . . . .	110

Preference Query Analysis and Optimization

Gao, Y.; Liu, Q.

2017, XI, 110 p. 58 illus., 23 illus. in color., Softcover

ISBN: 978-981-10-6634-4